NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

DESIGNATED NATIONAL HISTORIC LANDMARK 12/20/89

B-3718

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Lightship No. 116, "Fenwick," "Chesapeake," "Delaware"
other names/site number Chesapeake

2. Location

street & number Pier Four, Inner Harbor ☐ not for publication
city, town Baltimore ☐ vicinity
state Maryland code 24 county Baltimore code 510 zip code

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☐ private	☐ building(s)		buildings
☐ public-local	☐ district		sites
☐ public-State	☐ site		structures
☒ public-Federal	☒ structure	1	objects
	☐ object		Total

Name of related multiple property listing:
N/A

Number of contributing resources previously listed in the National Register 1

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☐ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of certifying official — Date

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☐ entered in the National Register.
☐ See continuation sheet.
☐ determined eligible for the National Register. ☐ See continuation sheet.
☐ determined not eligible for the National Register.
☐ removed from the National Register.
☐ other, (explain:) _____

Signature of the Keeper — Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)
Government-Aid to Navigation

Current Functions (enter categories from instructions)
Museum

7. Description

Architectural Classification
(enter categories from instructions)

N/A

Materials (enter categories from instructions)

foundation N/A
walls N/A
roof N/A
other N/A

Describe present and historic physical appearance.

Formerly "Fenwick," "Chesapeake," and "Delaware," the 1930 lightship No. 116, once again known by her U.S. Coast Guard designation of "Chesapeake" (WLV 538), is a floating historic museum vessel moored at Pier 3 in Baltimore's inner harbor near the foot of Gay and Pratt Streets. Owned by the National Park Service, but on a 25-year loan to the City of Baltimore until 2006, No. 116 is operated by the Baltimore Maritime Museum, whose offices and exhibits are housed aboard the vessel.

NO. 116 AS BUILT AND MODIFIED DURING HER CAREER

As built in 1930, the lightship designated No. 116 is a welded steel-hulled vessel 133.3 feet in length with a 30-foot beam and a 13-foot draft. The vessel displaces 630 tons. [1] Built to the characteristic lines of a 20th century American lightship, No. 116's double-riveted hull was constructed to be strong and seaworthy. As a typical lightship hull, No. 116 shared many characteristics with her contemporary steel sisters:

> The American vessel generally...has her lighting elements divided into two, and two lamps are arranged, one each at the top of a pole mast. Cones, cages, and other day marks are arranged on the masts above or below the lanterns....There is usually a bar keel, big rise of floor, and large tumble home, the outline of midship section being somewhat reminiscent of that of an icebreaker. The

[X] See continuation sheet

sheer is severe, rising rapidly both to the bow and to the stern. The bow is a strong forging and sharply raked, containing the hawse pipe for the mushroom mooring anchor. There is also the hawse pipe for the standby anchor. The stern is of stereotypical single knuckle type and contains the rudder, sternpost of usual construction, and the propelling wheel....The ships generally have two complete decks and a third part deck forward and aft of the machinery space. Side doors in the hull give access to the second deck and tend to follow...characteristic side loading.... [2]

No. 116 is painted in the colors used by the Coast Guard on American lightships after 1945. Her hull is bright red, with buff or spar colored masts and superstructure, and the name of her station painted in bold white block letters on the hull. Originally painted as "Fenwick," she was repainted "Chesapeake" in 1933 and "Delaware" in 1965. In 1971 she was repainted "Chesapeake" when decommissioned and turned over to the National Park Service.

The design of No. 116 reflected improvements made in lightship design by the United States Lighthouse Service to create a third generation of American lightships. Among those improvements, as embodied in No. 116, were the placement of the hawse pipe in the bow as opposed to immediately abaft the stem, the installation of bilge keels to reduce rolling, a reduced metacentric height, an increased bow height and sheer, and most importantly a shift from wood to metal hulls and unpowered to powered vessels. An improved version of the first generation "modern" lightships, No. 116 was a drier, roomier vessel with greater ability to stay on station in the roughest seas. [3] Below decks the lightship was divided into two decks. The lower deck is occupied by the engineroom, motor room, work shops, and storage.

The berth deck was divided into several cabins and staterooms. Aft is the wardroom, which is flanked by the staterooms for the

SEE CONTINUATION SHEET

mates and engineering officers. Forward are the crew's quarters, cook's cabin, recreation room, radar room, crew's head, and the anchor windlass. The windlass, driven by an General Electric-manufactured electric motor, was manufactured by the Hyde Windlass Co. in 1929. Midships, surrounded by steel bulkheads, is the upper generator and motor rooms; the galley is in the center of the ship. It is flanked by the crew's mess to port and the cook's prep area to starboard. Above decks, and reached by ladders from the berth deck, are the pilothouse, with the captain's cabin aft of and connected to it, and the radio and weather rooms. Between the cabins is the engineroom trunk and the single funnel.

The principal feature of the vessel above decks are the two steel masts that mount the lights. The foremast is 52.9 feet above deck level, and the mainmast stands 53.2 feet high. The lights are 66 feet above the water and could be seen for 14 miles. The illuminating apparatus is a 375mm electric lens, 13,000-candlepower lantern on the foremast. When built the lightship was equipped with a submarine bell and an electric diaphragm horn fog signal; in 1935 the submarine bell and diaphragm horn were removed and an air diaphone F2T fog signal was installed. [4] The lightship additionally carries a hand-operated bell at the bow; mounted in a steel gallows, the bronze bell is inscribed "USLHS, 1930."

One of the first Diesel-electric lightships (her sister No. 100 was the first), No. 116 was built with a single 350-h.p. electric motor driven by twin GM 671, marine Diesel engines that developed 350-h.p. at 300 revolutions per minute. Ther electric motor drove her single 5-foot, 9-inch diameter screw. No. 116's maximum speed was 10 knots; the vessel averaged 9 knots. [5]

No. 116 underwent normal repair and maintenance throughout her career. The only modifications were the installation of a radio beacon in 1933, the change in horns, the 1945 installation of surface search radar, and the temporary armament of the lightship between 1942 and 1945. During the Second World War No. 116 carried two 20mm guns. The only major damage to the vessel was in 1936 when she dragged during a hurricane. The deck furniture was swept away and one mushroom anchor was lost.

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PRESENT APPEARANCE AND CONDITION OF NO. 116

No. 116 is maintained in good condition by the Baltimore Maritime Museum. Moored at Pier 3, the vessel is boarded by a gangway attached to the starboard side. The hull is painted bright red, with "Chesapeake" painted alongside in large white letters, reflecting the station most appropriate to No. 116's present location. The decks and superstructure are painted in a buff color. Equipment on deck includes a motor lifeboat, the manual fog bell, and a 7-1/2-ton mushroom anchor stowed on the port bow.

Below decks the lightship retains her original equipment and furnishings. This includes the leather couch, table, and chairs in the wardroom, bunks, complete with bedding, in the officers' cabins, dinnerware stowed in racks in the mess, and cooking utensils and comestibles in the galley, which remains in use as an operational feature of the ship. The radio room retains its equipment and is also a licensed, operational feature. The engineroom is in good condition and No. 116 is capable of navigating under her own power. The vessel retains a high level of integrity and in appearance is little changed from her years of operation from 1930 until 1970.

NOTES

1
... Annual List of Merchant Vessels of the United States (Washington, D.C.: Government Printing Office, 1931) and James P. Delgado, ed. Evaluative Inventory of Large Preserved Historic Vessels in the United States (Washington, D.C.: National Park Service, 1987), entry for "Chesapeake."

2
A.C. Hardy, American Ship Types: A Review of the Work, Characteristics, and Construction of Ship Types Peculiar to the Waters of the North American Continent (New York: D. Van Nostrand Co., Inc., 1927) pp. 254-256.

3
Ralph C. Shanks, Jr. and Janetta Thompson Shanks, Lighthouses and Lifeboats of the Redwood Coast (San Anselmo, California: Costano Books, 1978) p. 143.

SEE CONTINUATION SHEET

4
Willard Flint, Lightships of the United States Government (Washington, D.C.: U.S. Coast Guard, 1989), unpaginated, entry for Lightship No. 116.

5
Ibid.

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:
☐ nationally ☐ statewide ☐ locally

B-3718

Applicable National Register Criteria ☐A ☐B ☐C ☐D NHL 1,4

Criteria Considerations (Exceptions) ☐A ☐B ☐C ☐D ☐E ☐F ☐G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Government	1930-1970	1933-1965
Humanitarian	1930-1970	1930-1970
Architecture (Naval)	1930	1930

NHL XIV-B: Transportation: Ships, Boats, Lighthouses, and Other Structures

Cultural Affiliation
N/A

Significant Person
N/A

Architect/Builder
Charleston Drydock and Machine Co., Charleston, South Carolina

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The 1930 lightship No. 116, now known by her former designation of "Chesapeake," is one of a small number of preserved historic American lightships. Essential partners with lighthouses as aids to navigation along the coast of the United States, lightships date to 1820 when the first vessel to serve as an aid to navigation was commissioned. Surviving lightships in the United States date from 1902 to 1952, when the last was built and launched. The years 1929 and 1930 saw the construction of several of these vessels and the construction of the first lightships to be powered by Diesel-electric plants. This significant change in lightship power plants and propulsion marked the third generation of lightship design, of which No. 116 is the best preserved example. Only four other third generation lightships, No. 111, No. 114, 115, and No. 118, survive. No. 111 is a hulk in a shipbreaker's yard; No. 114, at New Bedford, Massachusetts, has a diminshed level of integrity and is not in good condition. No. 115, grounded at Whitehaven, Maryland, is missing most of her equipment, one mast, and has suffered two sinkings and an engineroom fire. No. 118, a direct-diesel

☒ See continuation sheet

propelled sister ship, is a museum vessel at Lewes, Delaware. She possesses a good level of integrity but not as high as No. 116; she also was associated with stations of lesser significance than Chesapeake, "Cornfield Point," "Cross Rip," and "Boston." Associated with and marking the safe entry into the nationally significant harbors of Chesapeake Bay, No. 116 is not only the best preserved example of the 1930s, 133-foot class lightship; her career represents the role of the lightship as a floating aid to navigation. Lightships also played significant roles in World War II. Many were armed and served as "examination vessels," helping guard important ports and harbors. No. 116 served as an examination vessel off Cape Cod and helped protect the important port of Boston.

The preceding statement of significance is based on the more detailed discussion which follows.

THE DEVELOPMENT OF THE AMERICAN LIGHTSHIP

While the first American lighthouse dates to the colonial era, the use of lightships is a more recent and 19th century phenomenon in the United States, though employed earlier in Europe. Moored on treacherous reefs, or marking the narrow approaches to a channel or harbor entrance too far offshore for a shoreside lighthouse's lens to reach, lightships were fewer in number than the hundreds of lighthouses -- 179 lightships were built between 1820 and the 1950s, and in 1909, the heyday of the United States Lighthouse Establishment, there were 51 lightships (46 on the eastern seaboard and 5 on the Pacific Coast) on station in the United States.

Among the more famous and significant lightship stations were "Ambrose," marking the southern entrance into New York harbor along the New Jersey coast; "Nantucket," marking not only the entrance to Boston harbor but also the American end of the transatlantic route; "Diamond Shoals" off the Outer Banks of North Carolina, which marked a dangerous spot along the coastal ocean highway by way of the Gulf Stream; and "San Francisco" on the bar 3 miles out from the Golden Gate.

The first lightship was a small wooden schooner moored on Chesapeake Bay. From this pioneer, the lightship type developed

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through the 19th century from sail to steam, from wood to iron to steel hulls, and to more powerful optics. Usually sequentially numbered as they entered service under the United States Lighthouse Board, the United States Lighthouse Service, and later the U.S. Coast Guard, lightships, like lighthouses remained constant in their location, with new vessels replacing the old. Thus there were more than one "Nantucket," "Ambrose," "Columbia," "Diamond Shoals," and "San Francisco," as well as others, on the various stations through the years. [1]

By the end of the 19th century, hard-learned lessons resulted in a standardization of lightship form and design. Heavily constructed steel hulls moored with massive mushroom anchors and huge strongly forged huge, built to ride out storms and rough seas, with decks designed to let the water run off and a dual mast system enabling a light to always be kept lit defined the basic "modern" characteristics for lightships in the United States. Technological advances--the introduction of electrical lighting, welded hulls, and the switch from steam to diesel to diesel-electric engines -- brought modifications to the lightship without necessarily changing the basic form. While older lightships were modified to accept the technological changes, new classes of ships were built to embody the "new" technology. Thus the first class of lightships built in the 20th century with riveted steel hulls and massive steam engines -- numbers 78 through 84 -- were replaced at some stations by welded steel lightships such as the Pacific Coast's No. 100 with diesel-electric propulsion, diaphone air horns, 1,000-watt electric lights in 375-mm lenses, and a reduced tonnage (with the installation of a less heavy diesel- electric system) meaning less resistance to the sea and hence less battering. [2]

Between 1946 and 1952, a new (and the last) class of six lightships, built under the auspices of the United States Coast Guard, which had absorbed the U.S. Lighthouse Establishment in 1939, were introduced and built. The first lightships with all-welded hulls, they were also the first and only lightships to employ an alternating current electrical system. Reflecting the improvement in diesel technology, they were high-speed direct diesel propelled. Their internal arrangements were roomy and modern, offering more amenities of life for their crews. While

SEE CONTINUATION SHEET

these vessels closely resembled in external appearance the earlier lightships of the early 20th century and the 1930s, a number of which were still in commission, they were different vessels.

Technology finally brought an end to manned lightships at the same time manned lighthouses were being considered for automation. Large navigational buoys 40 feet in diameter and 42 feet high, painted lightship red and equipped with automatic lights, fog signals, and radio beacons began to replace lightships in 1967. In 1983, the last lightship had been retired, ending a 150-year lightship tradition in the United States.

CONSTRUCTION AND CAREER OF NO. 116

After 1926, as part of the modernization of the lightship fleet, the United States Lighthouse Service sought funds to build several welded and riveted steel lightships with direct-diesel and diesel-electric power plants. Known as the 133-foot class, these were the last lightships built by the Lighthouse Service. The first of these vessels, No. 100, was laid down and built in 1929, and after her four identical "sisters" were built at different yards to the same plan. No. 116 was built at Charleston, South Carolina, by the Charleston Drydock and Machine Co. at a cost of $274,434. Launched on October 22, 1929, the vessel was completed on August 14, 1930. [3] Sent to the Fenwick Island Shoal station off Delaware, No. 116, designated "Fenwick," served there until the station was discontinued on June 30, 1933. The lightship was then moved farther south to the Chesapeake station, where she would remain for most of her career as "Chesapeake."

The Chesapeake station, established on February 17, 1888, originally was at Lat. 37 05.5 - Long. 75 43.0, 9.3 miles offshore in 39 feet of water, 102 degrees from the Cape Charles Light. Cape Charles light was the first lighthouse built by the United States Government (and a National Historic Landmark). Augmenting the lighthouse, the lightships at the station, then known as "Cape Charles," marked the north side of the Chesapeake Bay entrance. The station was shifted to 37 05.0 - 75 40.3, a

SEE CONTINUATION SHEET

change of some 2.2 miles at 103 degrees in 56 feet of water in 1922 to assist deeper draft vessels. In 1928 the station was moved an additional 6.5 miles to 36 58.7 - 75 42.2 at 194 degrees off the Cape Charles Light, in 63 feet of water to better conform with other aids to navigation marking the bay entrance. The station was renamed "Chesapeake" at that time. [4]

The first lightship assigned to the station was No. 46 (1888-1891), followed by No. 49 (1891-1916), No. 101 (1916-1924), No. 80 (1924-1927), No. 72 (1927-1933), and finally No. 116, the sixth and last, from 1933 to 1965, excepting the period between 1942 and 1945 when No. 116 was sent north for war duty and the station was marked by a buoy. The station was busy; in 1898 Lightship No. 49 logged 11,281 passing vessels. The station was important, in that it marked the entrance to the great Chesapeake Bay port of Baltimore and also guarded the approach to the shipbuilding center of Newport News and the Navy base at Norfolk, Virginia. The station was occasionally rough; according to lightship historian Willard Flint, "lightships marking the station were blown or dragged off station 9 times in severe weather" and No. 49 was rammed by the steamer Grayson on December 18, 1912. [5]

No. 116 was caught by a hurricane on September 17 and 18, 1936. In the heavy swell the anchor chain parted and the lightship drifted. The spare anchor was dropped and the lightship ran full ahead for 10 hours to relieve the strain on the cable. Sweeping seas boarded the lightship, smashed the whaleboat and motor launch, and carried off the dory. A relief vessel replaced No. 116 for six days while the damage was repaired. [6]

With the entry of the United States into World War II in 1941, many lightships were taken off station, armed, and then served as "examination vessels." These floating pickets guarded port and harbor approaches. No. 116 was sent to Sandwich, Massachusetts, in 1942. There she served off the eastern entrance to the Cape Cod Canal until 1945, when the lightship was sent back to Chesapeake station, where she remained until 1965. From 1966 until 1970 the lightship served at the mouth of Delaware Bay as "Delaware." Laid up, the lightship was decommissioned on August 25, 1970, and transferred to the National Park Service's National

SEE CONTINUATION SHEET

Capital Region on January 6, 1971. Refurbished at the Washington Navy Yard in 1972 and displayed at Hains Point in East Potomac Park, No. 116 was used as a floating environmental living center until 1980. In June 1981, the lightship was placed on 25-year loan to the City of Baltimore and moored in that city's Inner Harbor as part of the Baltimore Maritime Museum, where she remains today.

NOTES

1
See George R. Putnam, Lighthouses and Lightships of the United States (New York: The Houghton-Mifflin Co., 1917).

2
A.C. Hardy, American Ship Types: A Review of the Work, Characteristics, and Construction of Ship Types Peculiar to the Waters of the North American Continent (New York: D. Van Nostrand Co., Inc., 1927) pp. 254-257, passim.

3
Willard Flint, Lightships of the United States Government (Washington, D.C.: U.S. Coast Guard, 1989), unpaginated, entry for Lightship No. 116, and "Lightship No. 116," U.S. Lighthouse Service Bulletin, III (71) November 1, 1929, p. 313.

4
Flint, Op.cit., entry for Chesapeake Lightship Station.

5
Ibid.

6
"Lightships in September Hurricane," U.S. Lighthouse Service Bulletin, V (10) October 1936, p. 35.

9. Major Bibliographical References

B-3718

PLEASE SEE FOOTNOTES IN TEXT.

☐ See continuation sheet

Previous documentation on file (NPS):
- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☒ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary location of additional data:
- ☐ State historic preservation office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☒ Other

Specify repository: Baltimore Maritime Museum

10. Geographical Data

Acreage of property .1

UTM References

	Zone	Easting	Northing
A	18	361180	4349500
B			
C			
D			

☐ See continuation sheet

Verbal Boundary Description

All that area encompassed within the extreme length, beam, and depth of the vessel.

☐ See continuation sheet

Boundary Justification

The boundary encompasses the entire area of the vessel as she floats at her berth.

☐ See continuation sheet

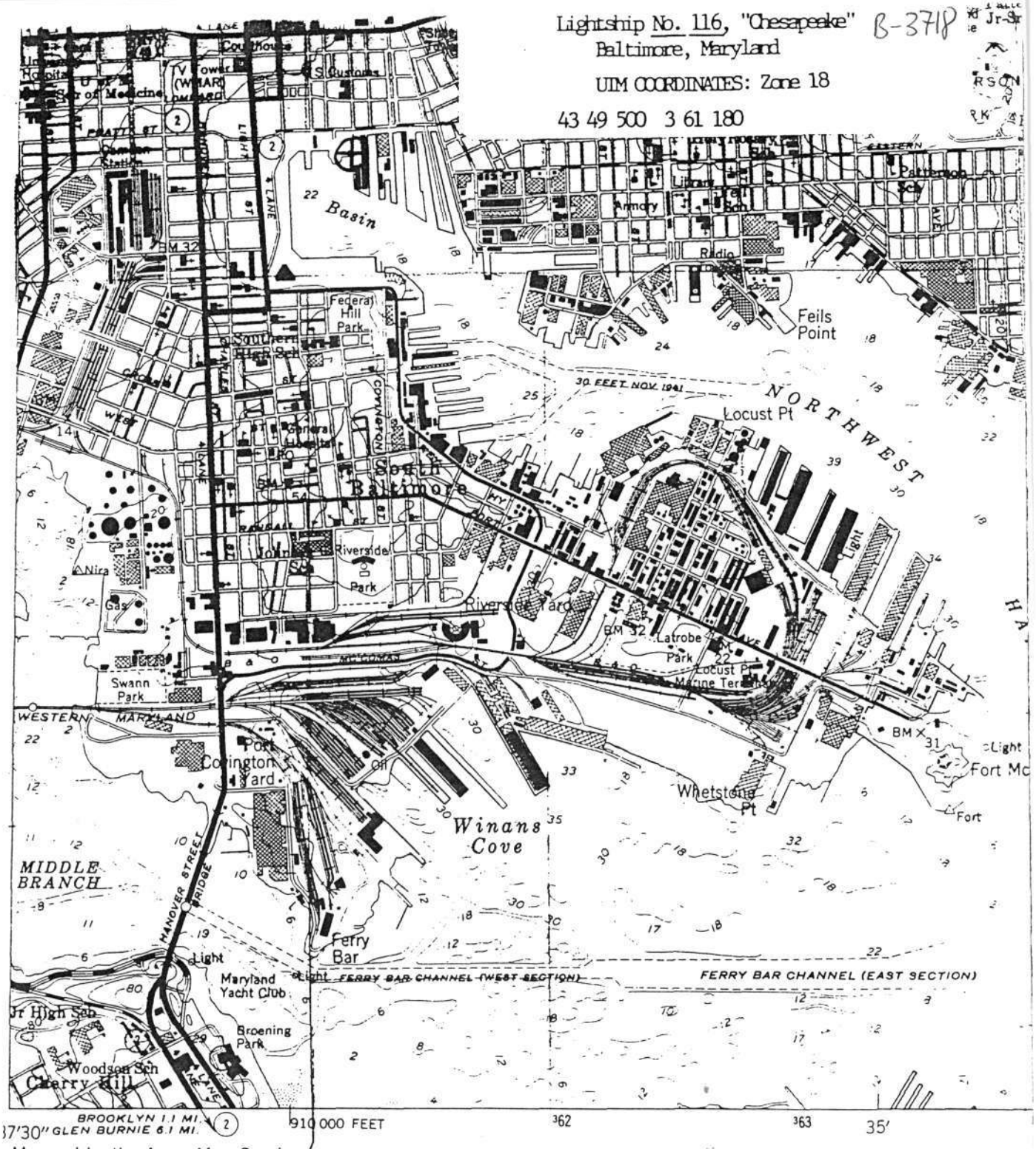
Form Prepared By

name/title James P. Delgado, Maritime Historian
organization National Park Service (418) date June 30, 1989
street & number P.O. Box 37127 telephone (202) 343-9528
city or town Washington state D.C. zip code 20013-7127

Lightship No. 116, "Chesapeake" B-3718
Baltimore, Maryland

UTM COORDINATES: Zone 18

43 49 500 3 61 180



Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, USC&GS, USCE, and City of Baltimore

Topography from aerial photographs by photogrammetric methods. Aerial photographs taken 1943. Field checked 1944
Culture revised by the Geological Survey 1953

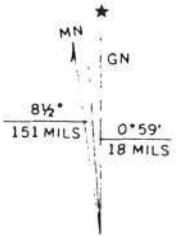
Hydrography compiled from USC&GS Chart 545 (1951)

Polyconic projection. 1927 North American datum
10,000-foot grid based on Maryland coordinate system
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue

Red tint indicates areas in which only landmark buildings are shown

Revisions shown in purple compiled by Geological Survey from aerial photographs taken 1966 and 1974. This information not field checked

Purple tint indicates extension of urban areas



UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

B-3718

LIGHTSHIP NO. 116, CHESAPEAKE
BALTIMORE, MARYLAND
Owner: NATIONAL PARK SERVICE
LIGHTSHIP NO. 116 AS CHESAPEAKE, PRIOR
TO THE SECOND WORLD WAR.
Photo #1 by UNKNOWN, CIRCA 1936
Courtesy of: U.S. COAST GUARD HISTORIAN'S OFF

B-3718

LIGHTSHIP NO. 116, CHESAPEAKE
BALTIMORE, MARYLAND
Owner: NATIONAL PARK SERVICE
LIGHTSHIP NO. 116 AT HER BERTH ON THE
BALTIMORE INNER HARBOR.
Photo #2 by J. CANDACE CLIFFORD, 1989

B-3718

LIGHTSHIP NO. 116, CHESAPEAKE
BALTIMORE, MARYLAND
Owner: NATIONAL PARK SERVICE
BOW VIEW OF LIGHTSHIP NO. 116, SHOWING THE MASTS WITH OPTICS.
Photo #3 by J. CANDACE CLIFFORD. 1989
Courtesy of: NATIONAL PARK SERVICE

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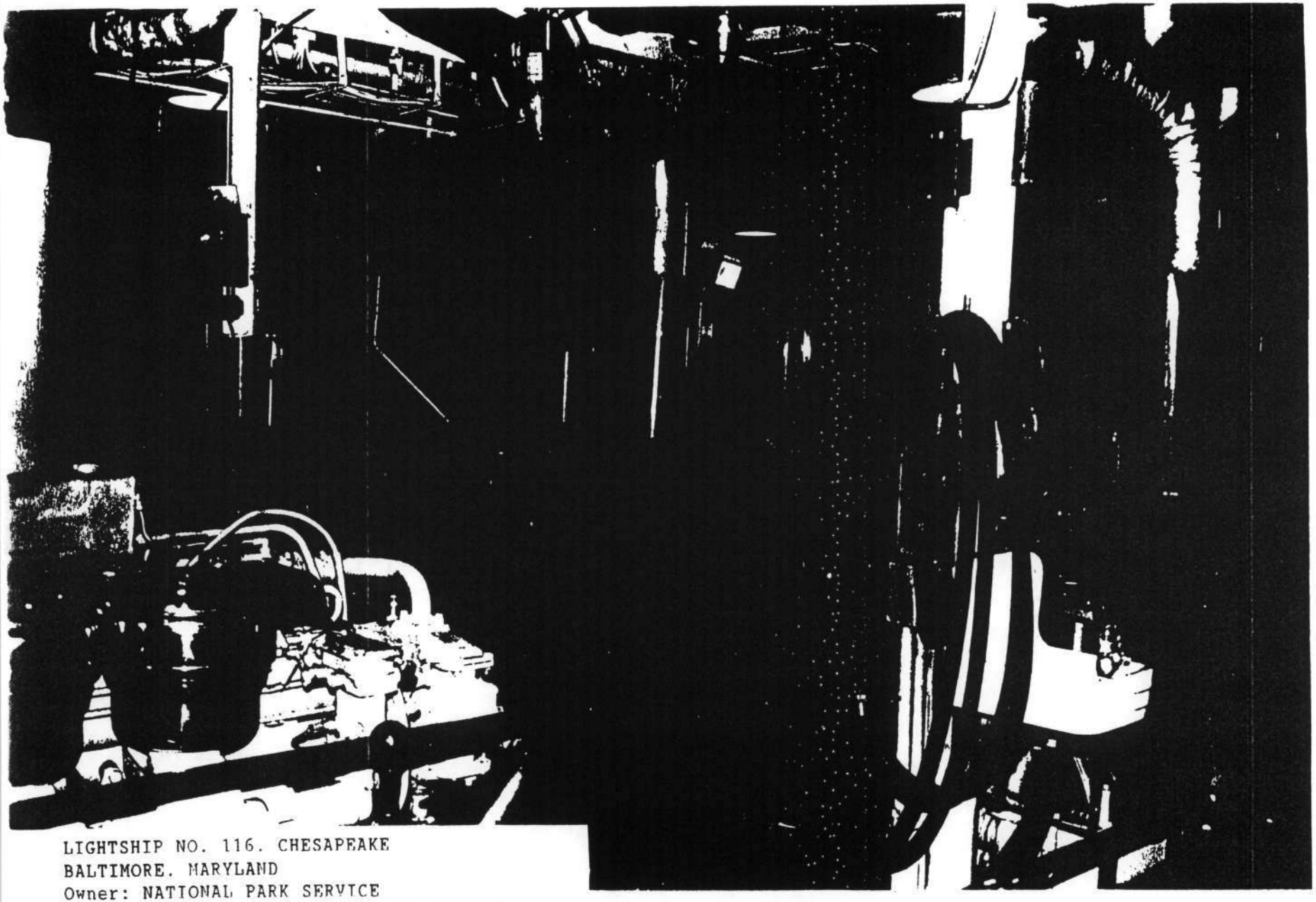
LIGHTSHIP NO. 116, CHESAPEAKE
BALTIMORE. MARYLAND
Owner: NATIONAL PARK SERVICE
HAND STRUCK FOG BELL ABOARD LIGHTSHIP
NO. 116.
Photo #4 by J. CANDACE CLIFFORD. 1989
Courtesy of: NATIONAL PARK SERVICE

B-3718

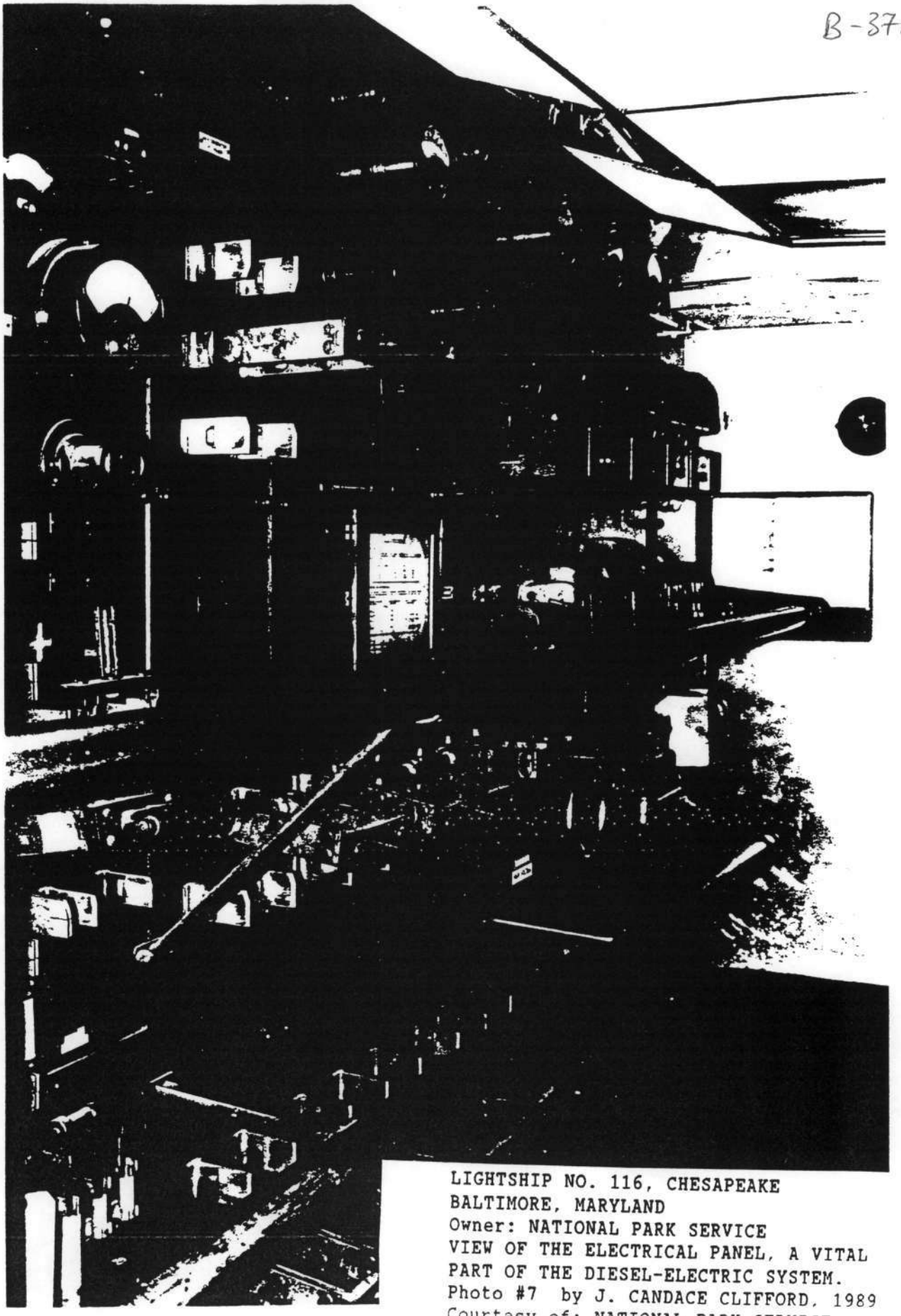
LIGHTSHIP NO. 116, CHESAPEAKE
BALTIMORE, MARYLAND
Owner: NATIONAL PARK SERVICE
WARDROOM OF LIGHTSHIP NO. 116; ALSO NOTE
RUDDER QUADRANT ABOVE SETTEE.
Photo #5 by J. CANDACE CLIFFORD, 1989
Courtesy of: NATIONAL PARK SERVICE

B-8719



LIGHTSHIP NO. 116. CHESAPEAKE
BALTIMORE. MARYLAND
Owner: NATIONAL PARK SERVICE
ENGINEROOM OF LIGHTSHIP NO. 116: SHOWING
DIESEL ENGINES OF THE VESSEL.
Photo #6 [illegible] J. CANDACE CLIFFORD. 1989
Courtesy [illegible]: NATIONAL PARK SERVICE

B-3718



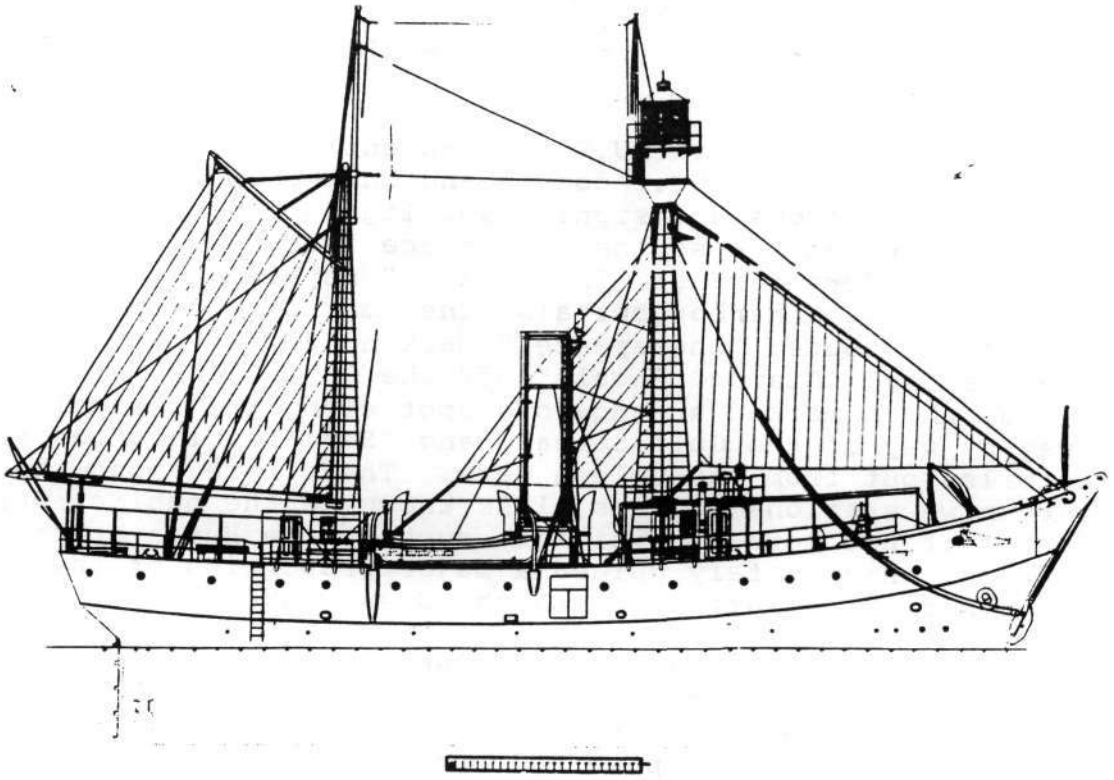
LIGHTSHIP NO. 116, CHESAPEAKE
BALTIMORE, MARYLAND
Owner: NATIONAL PARK SERVICE
VIEW OF THE ELECTRICAL PANEL, A VITAL PART OF THE DIESEL-ELECTRIC SYSTEM.
Photo #7 by J. CANDACE CLIFFORD, 1989
Courtesy of: NATIONAL PARK SERVICE

B-3718

THE MARITIME HERITAGE OF THE UNITED STATES
NATIONAL HISTORIC LANDMARK THEME STUDY

Part One: Large Preserved Historic Vessels

LIGHTSHIPS



James P. Delgado
Maritime Historian
United States Department of the Interior
National Park Service

Washington, D.C.

June 1989

B-3718

THE DEVELOPMENT OF THE AMERICAN LIGHTSHIP

Lightships were essential partners with America's lighthouses as part of the federal government's commitment to safe navigation on the nation's coasts and on the Great Lakes. While the first American lighthouse dates to the colonial era, the use of lightships is a more recent 19th century phenomenon in the United States, though employed earlier in Europe. Moored over treacherous reefs, or marking the narrow approaches to a channel or harbor entrance where lighthouses could not be built or placed in areas too far offshore for a shoreside lighthouse's lens to reach, lightships were fewer in number than the estimated 1,500 lighthouses built in the United States. In all, 179 lightships were built between 1820 and the 1952. In 1909, the heyday of the United States Lighthouse Service, there were 51 lightships (46 on the eastern seaboard and five on the Pacific Coast) on station in the United States.

Between 1820 and 1983, the U.S. government established 116 lightship stations on three coasts and on the Great Lakes. [1] Among the more famous and significant lightship stations were "Ambrose," marking the southern entrance into New York harbor along the New Jersey coast; "Nantucket," marking not only the entrance to Boston harbor but also the American end of the transatlantic route; "Chesapeake," marking the entrance into Chesapeake Bay, "Diamond Shoals" off the Outer Banks of North Carolina, which marked a dangerous spot along the coastal ocean highway by way of the Gulf Stream; and "San Francisco" on the bar three miles out from the Golden Gate. These were among the better known stations; others, less known to the public, were as important if not more significant, such as the Huron station on Lake Huron, which safely guided a major proportion of the nation's maritime traffic across the Great Lakes.

The first lightship was a small wooden schooner moored on Chesapeake Bay. From this pioneer, the lightship type developed through the 19th century from sail to steam, from wood to iron to steel hulls, and to more powerful optics. The development of the lightship was also marked by changes in hull design, the development of direct diesel and diesel-electric propulsion, changes in sound signals, and the development of the radio beacon in the 1903s, which revolutionized the navigational potential of lightships by providing a non-visual long distance bearing to the lightship station. Officially designated by numbers after 1867 (such as Lightship No. 112), the lightships were often referred to by the name of the station on which they served, such as "Nantucket." Because of this, an individual lightship in the course of her career was often known by more than one station name. Serving under the the Fifth Auditor of the Treasury, the United States Lighthouse Board, the United States Lighthouse Service, and finally the United States Coast Guard, lightships like lighthouses remained at a constant location, with new vessels replacing the old. Thus there were more than one "Nantucket," "Ambrose," "Chesapeake," "Diamond Shoals," and "San Francisco," as well as others, on the various stations through

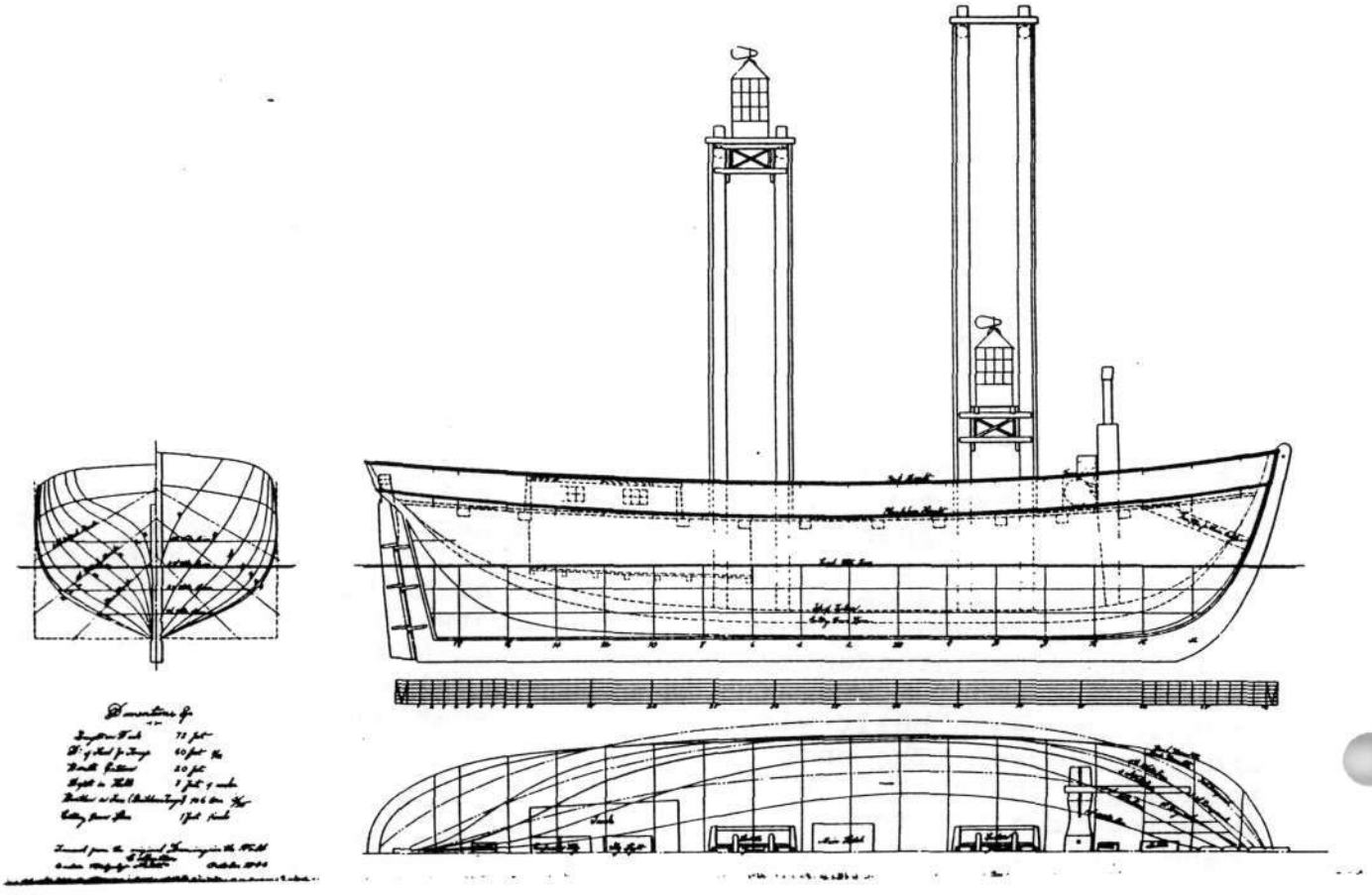
the years. [2] Lightships, also referred to as light vessels, retained their lighthouse service numbers until 1947, when the U.S. Coast Guard designated some of them "WAL" and assigned a new number (such as WAL-534). After 1965, all lightships were redesignated "WLV" (such as WLV-534).

FIRST GENERATION WOODEN HULLED LIGHTSHIPS

The first American lightships were built with wooden hulls. They replaced the early beacon boats, small, undecked craft apparently built for sheltered waters. Joseph Hill, the probable builder of the sloop Discovery, originally a beacon boat, described her in 1821 as a 26.2 by 9.8 by 3.9-foot, 8-16/95-ton vessel with a square stern, built around 1791. In 1821, Hill noted that the vessel was fitted with a single mast and deck, apparently installed after she was sold by the government, "condemned as not fit for service." [3] The beacon boats were unmanned, securely moored vessels that served as large buoys. The first manned lightship was authorized by Congress in 1819 and built in 1820 by John Pool in Hampton, Virginia. The specifications called for a 70-ton vessel, copper fastened and sheathed, with berths for four men, a galley, a capstan belfry, spars, and a yawl boat with davits. [4] A more detailed description of an early wood lightship is found in an 1823 contract between Jonathan Thompson, Superintendent of Lighthouses in New York, and New York shipbuilder Henry Eckford. The contract calls for three lightships, each built with white oak frames and live oak planks, and pine decks. The ships were to be iron and cooper fastened and copper sheathed. The two masts would mount copper lanterns, supplied from oil rooms lined with tin in the hold. On deck, "cabooses" or cabins for sleeping 6 to 8 men were to be built. The ships would be ballasted with kentledge (iron pigs), and anchored with iron chain and cast-iron mushroom anchors. One vessel, slated for Cape Hatteras, was to be approximately 300 tons burthen. The other two, for Delaware Bay, were to be approximately 100 tons. Eckford built the latter two 106-3/95-ton vessels. They were 72 feet long, with 20-foot beam and 8.4-foot depth of hold. [5]

The hull design of these early vessels did not differ from that of standard merchant vessels. The lines of Eckford's 1823 lightships show a round-bottom hull with a bluff bow and somewhat sharper stern. This translated into a rough time in heavy seas. Many early lightships were not stable when anchored. In 1851, the captain of the Sandy Hook lightship complained that "the model of the present ship and her bottom, is similar to a barrel; she is constantly in motion, and when it is any ways rough she rolls and labors to such an degree as to heave the glass out of the lantern, the beds out of the berths, tearing out the chainplates, etc., rendering her unsafe and uncomfortable." [6] This problem would not be rectified until after 1856, when experiments led to the development of bilge keels to retard rolling.

In response to Congressional concern and criticisms of the



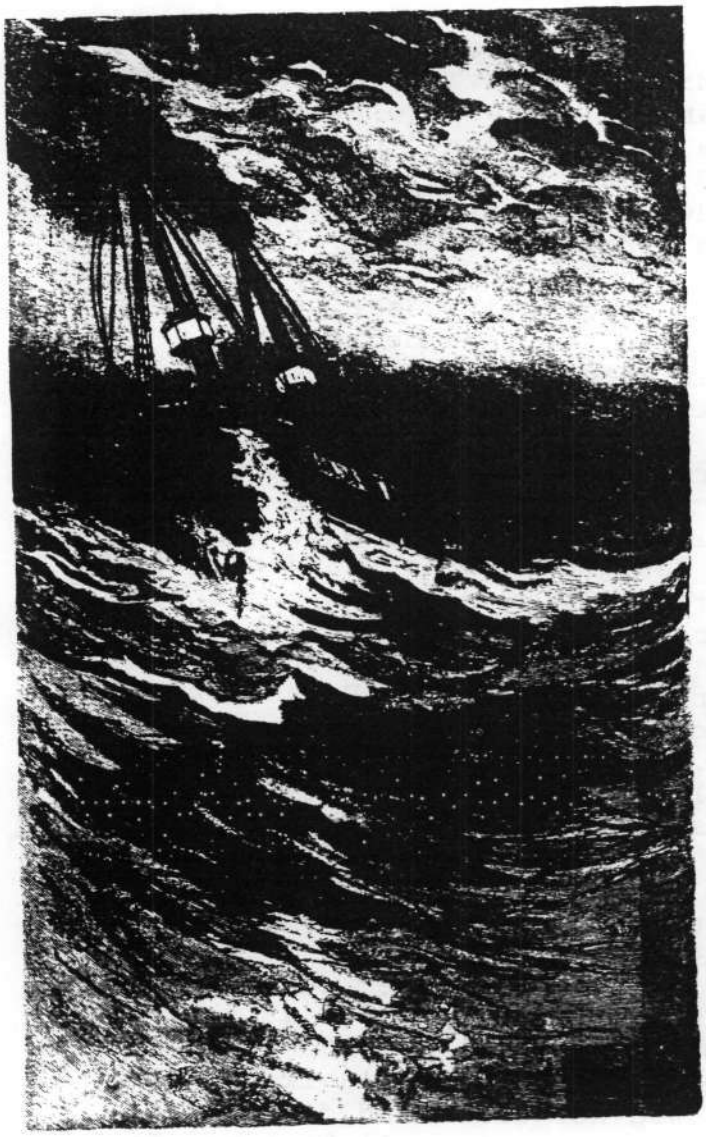
1. HENRY ECKFORD'S 1823 DRAWING OF A FIRST GENERATION WOOD-HULLED, UNPOWERED LIGHTSHIP. THE OPTIC, SUSPENDED BETWEEN TWO MASTS, WAS RAISED AND LOWERED BY BLOCK AND TACKLE. (The American Neptune)

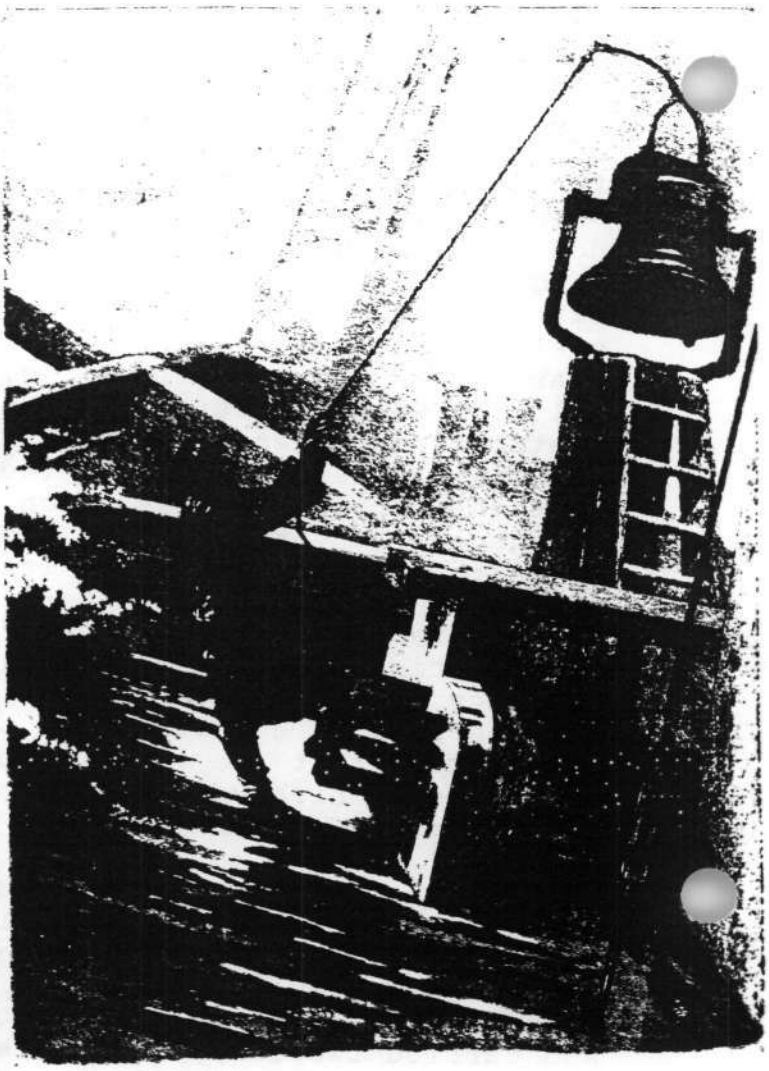
nation's aids to navigation, the Secretary of the Treasury appointed a Lighthouse Board. Manned by naval and army officers and civilian scientists, the board's duty was to "inquire into the condition of the light-house establishment" under provision of an Act of Congress of March 3, 1851. The Lighthouse Board found the lightships "in bad order, badly attended, and all with...insufficient illuminating apparatus....Many of them are not moored, but anchored by a single chain and anchor, with a long scope of cable; the vessel consequently describes a large circle around the anchor, destroying, in some degree, her usefullness as a range, and is in danger of fouling...." [7] The board found many vessels lit with lamps that ranged from pans of oil with wicks floating in them to lamps set into gimballed platforms that were suspended from the masts; these lights were not visible far out to sea. The board also criticized the fact that the various vessels, much like lighthouses up to that time, were built to various plans and designs with no standardization. Since the wooden lightships lasted only five to ten years because of decay, the Lighthouse Board recommended that iron vessels be substituted; "the advantages of iron over wood for the construction of light-vessels are self-evident. Durability, buoyancy, and economy of first cost, are the advantages, without any conceivable disadvantages...." [8] The board also recommended that the vessels follow the model of British lightships, which were iron vessels fitted with 21-inch parabolic reflectors and Argand lamps.

Lightships were fitted with better lamps and reflectors by the Lighthouse Board, but iron hulls were not built for decades. Instead, the board ordered a wooden vessel, later numbered as Lightship No. 1, in 1855. Built at Kittery, Maine, at the Portsmouth Navy Yard, the 275-ton oak vessel was 103 by 24 feet and carried two lamps atop each mast. Most wooden lightships built afterwards generally followed her lines and design, establishing the first "standard" for American lightships. Rigged as a schooner, the staunchly built vessel lasted on the rugged Nantucket station from 1856 until 1892, last serving off Savannah, Georgia until 1930. Sold to the Groveton, Massachusetts, Sea Scouts, the former lightship was grounded in a 1936 flood and stripped. In 1986, the 130-year-old hulk remained visible on the bank of the Merrimack River. [9]

In 1891, journalist Gustav Kobbe visited No. 1 on the Nantucket Station. He described how the space between the outer hull planks and ceiling planks was filled with salt "to keep her sweet," but devoted much of his attention to the particulars of the lights:

> The lanterns are octagons of glass in copper frames five feet in diameter, four feet nine inches high, with the masts as centers.... There are eight lamps, burning a fixed white light, with parabolic reflectors in each lantern, which weighs, all told, about a ton. About nine hundred gallons of oil are taken





2. LIGHSHIP NO. 1. "NANTUCKET." EXEMPLIFIED THE MID TO LATE-19TH CENTURY WOOD-HULLED LIGHTSHIPS. THE LANTERNS COULD ONLY BE RAISED HALFWAY UP THE MASTS TO REDUCE ROLLING. IN THE ILLUSTRATION TO THE RIGHT. A CREWMEMBER TOLLS THE FOG BELL ON THE FORECASTLE DECK. (The Century Magazine)

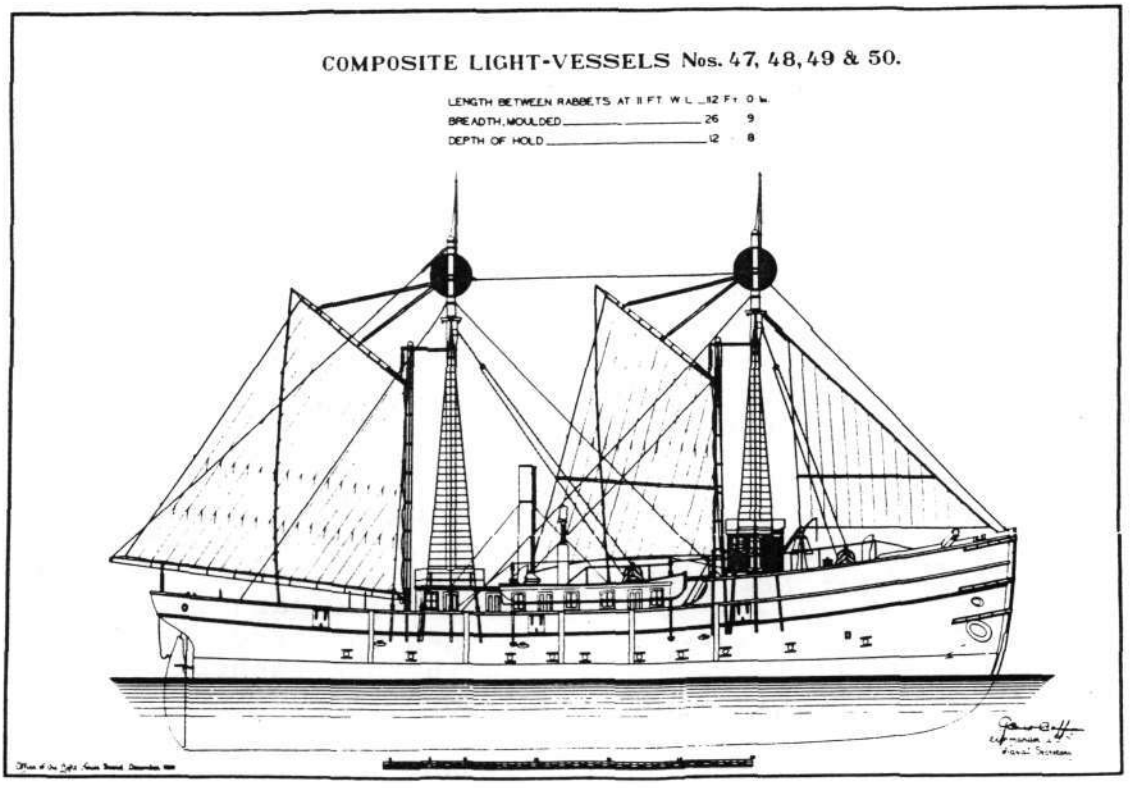
> aboard for service during the year. The lanterns are lowered into houses built around the masts. The house around the main lantern-mast stands directly on the deck, while the foremast lantern-house is a heavily timbered frame three feet high. This is to prevent its being washed away....When the lamps have been lighted and the roofs of the lantern-houses opened, -- they work on hinges and are raised by tackle, -- the lanterns are hoisted by means of winches to a point about twenty-five feet from the deck. Were they hoisted higher they would make the ship top-heavy. [10]

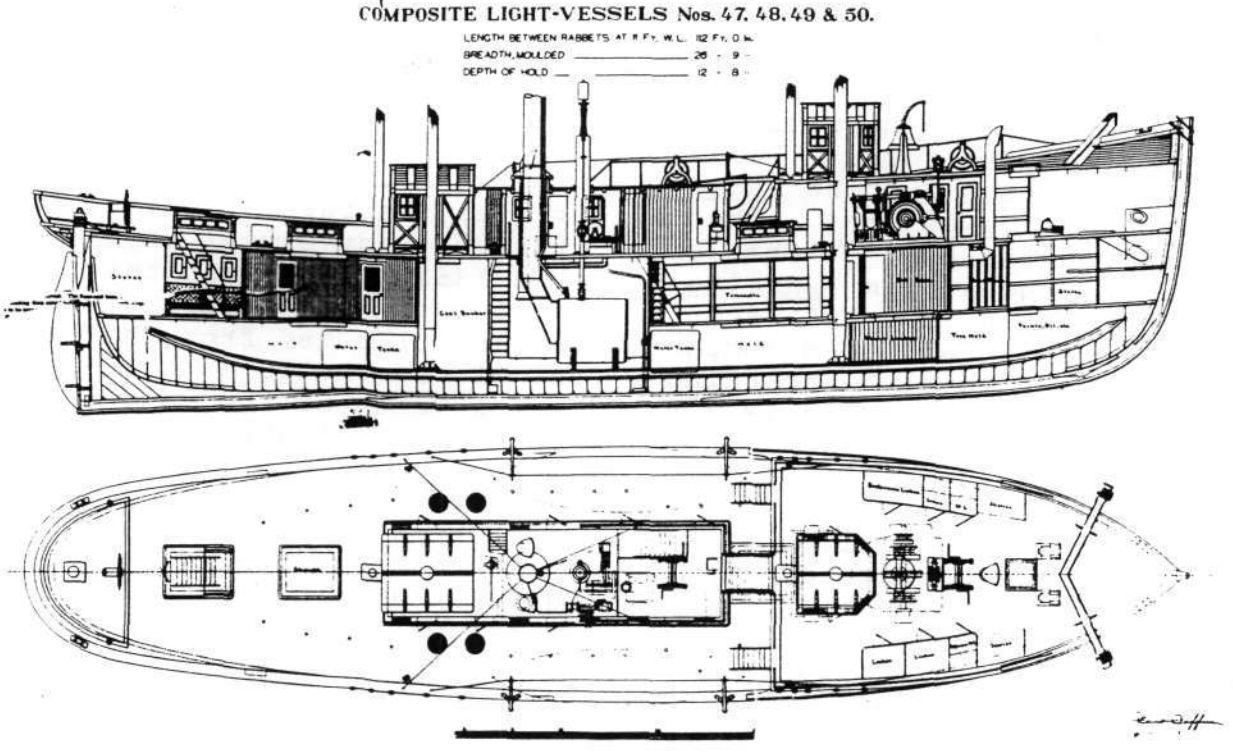
Not all of the early lightships were built as such. Some were former merchant vessels purchased by the government and modified, such as Lightship No. 8, built in 1853 as the brig Thomas J. Haight, or No. 10, a scow built as a stone barge, used to build the Stannard Rock Lighthouse, and then converted to a lightship on Lake St. Clair in 1882. It was in this fashion that the first iron-hulled lightships were acquired.

TRANSITIONAL GENERATION: COMPOSITE AND IRON AND STEEL HULLED LIGHTSHIPS

The first iron-hulled lightships were two former U.S. Revenue Marine steam cutters, Spencer and Legare, both of which were converted to lightships in 1847 during the Mexican War. Spencer marked Willoughby Spit in Virginia until retired in August 1867; Legare marked Merrills Shell Bank, Mississippi, until sunk by Confederate forces. The next iron lightship was the former Confederate gunboat Lady Davis, first built in 1858 as the tugboat James Gray. The Confederates, as part of their effort to defend the port of Charleston, removed Lady Davis' engines for the ironclad ram Palmetto State in 1862. Following the fall of Charleston, the U.S. acquired the former gunboat for use as a lightship. Equipped "using materials collected from Charleston and Port Royal," including 8 tons of old shells as ballast, the vessel was moved in 1865 to mark the wreck of the monitor Weehawken. Designated No. 31 in 1867, the lightship was withdrawn in 1871 and sold. [11]

Before building iron or steel lightships, the Lighthouse Board briefly experimented with composite construction in the 1880s. In 1881, Lightship No. 43 was built at Wilmington, Delaware, by Pusey and Jones with a iron hull sheathed in yellow pine. Other lightships built to the same design were numbers 45 and 46. Ten years later, the first composite lightship built with steel frames and a wood hull, No. 47, was launched at South Boston by Harrison and Loring. [12] These composite vessels were described in 1890 by Arnold Burges Johnson, Chief Clerk of the U.S. Lighthouse Board; "they are intended to be the most powerful and complete light-vessels ever built." [13] The next three lightships, numbers 48-50, as well as No. 66 (1896) and No. 67 (1897), were also built as composites. The last composite





3. TRANSITIONAL GENERATION COMPOSITE-HULL LIGHTSHIP DESIGN. THESE VESSELS. DESPITE THE PLACEMENT OF STEAM MACHINERY IN THEIR HULLS. WERE UNPOWERED AND REQUIRED TOWING. (Annual Report of the U.S. Lighthouse Service)

lightships, numbers 66-71, were built with steel frames, stem, stern, and keel, a bilge strake, and topside plating, while the bottom, from the line of the main deck down was planked with white oak and sheathed with Muntz metal. [14]

Despite these experiments, the development of metal hulled lightships lagged behind the adoption of iron and steel hulls in commercial and military vessels in the United States, in large part due to timber dependent United States shipbuilders' initial reluctance to build ships of metal, and the belief by the Lighthouse Board that wood hulls better withstood heavy seas and collisions than "brittle" iron. The rusting of iron hulls also encouraged fears of frequent maintenance. The operational experiences of the composite lightships in time would counter these beliefs. The board nonetheless was willing to experiment, though, and in 1882, one year after the first composite lightship was built, the first iron-hulled lightship designed and built as such, No. 44, was laid down by Pusey and Jones. The vessel carried steam auxiliary machinery, as did her contemporary composite and wooden sisters. Steam was used for the sound signal alone since light vessels were either towed or sailed out to station. [15]

There were only three other iron-hulled lightships, numbers 52, 53, and 54, all built at West Bay City, Michigan, in 1892. At the same place, in 1891, No. 51, the first steel-hulled lightship, was built. This vessel was also the first to receive an electric illuminating apparatus, rated at 4000-candlepower. [16] Other steel-hulled lightships followed, and after 1902 all lightships were built of steel. In 1904, Lightship No. 78 was built by the New York Shipbuilding Co. at Camden, New Jersey. No. 78's specifications called for a 129 foot long, 28.6-foot beam, 668 ton displacement steel-hulled vessel with a compound marine steam engine driving a single screw. Two masts mounted lanterns that were raised from steel houses to the masthead. [17] Numbers 79, 80, 81 and 83 were viewed by the Lighthouse Board as prototypes. In 1907, the subsequent specifications for Lightships No. 84-88 were adopted as "the standard specification for light vessels." [18]

By the end of the 19th century, hard-learned lessons had resulted in a standardization of lightship form and design, starting with a flat bottom, a rounded bow, and bilge keels to reduce rolling. The use of heavily constructed steel hulls, moored with massive mushroom anchors attached with strongly forged huge cables; decks designed to let the water run off; and a dual mast system to always keep a light lit characterized the typical lightship in the United States after 1904. Different classes of lightships were built, first with riveted, and finally with welded steel hulls, the principal distinction being the length of the hull and the power plants. These vessels were externally much the same, with the exception of Great lakes lightships, which were built differently for lake sailing conditions. Great Lakes lightships were sharper and shorter to better cope with the short wave intervals on the lakes and icing.

After 1891-1902, changes in lightships centered on the changes in propulsion and shipboard power systems and the development of the optics and sound signals aboard the lightships, including submarine bells, oscillators, and finally the radio beacon.

THE SECOND GENERATION: STEAM-POWERED AND PROPELLED LIGHTSHIPS

Most lightships were towed to station by lighthouse tenders, though many of the early vessels carried a fore-and-aft rig. Ironically, several former steamers were converted into lightships after their steam machinery was removed. Steam machinery was introduced for the first time when Lightship No. 39 was built in 1875. Two boilers powered a steam pump and the 12-inch fog whistle. [19] No. 40 was similarly equipped, but Lightships No. 41 and 42, built respectively in 1876 and 1877, were outfitted with John Ericsson's hot air caloric engine, which compressed air into a "Brown's Fog Siren." [20] All subsequent lightships carried auxiliary steam for the fog signals and pump, and, beginning with No. 47, for the windlass.

The Lighthouse Board's specifications for the composite lightships No. 47, No. 48, and No. 49 provide a detailed picture of the first steam machinery for lightship use. The board specified two cylindrical water-tube boilers of the "return-tubular" form, 6.6 by 7.3 feet, capable of reaching a working pressure of 100 pounds per square inch. The boilers powered a small, horizontal non-condensing steam engine "at least 5-inches in diameter with a 6-inch stroke," fitted with a Pickering governor, and capable of 120 revolutions per minute. The engine was connected to a shaft with a worm-wheel:

> On the same shaft which carries the worm-wheel will be a cast-iron cam-wheel about 20 inches diameter, upon which brass cams of proper length are to be fastened. These cams work against a small composition roller, which is fastened in the middle of the length of a wrought-iron lever about 32 inches long. One end of this lever is stationary as a fulcrum and at the other end is attached a rod half an inch in diameter, connected at the upper end to the bell-crank which operates the whistle valve. [21]

The whistle was a 12-inch diameter brass casting with a double-seat steam valve.

The first steam-propelled lightships, numbers 55, 56, and 57, were steel vessels built in 1891. However, like the introduction of iron and steel hulls, this innovation was not universally adopted at first. Lightships were built without steam propulsion for several years, reflecting the same slow adoption of the new technology that is seen in the late (1902) construction of the last wooden-hulled lightship, No. 74. [22] The early steam-

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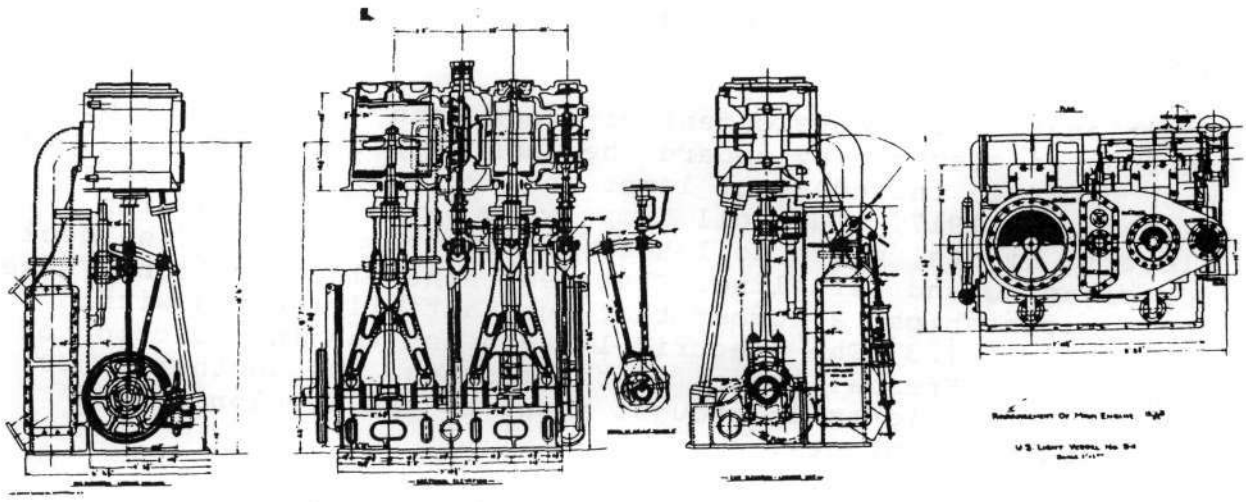


4. THE 325-HP. VERTICAL SURFACE CONDENSING COMPOUND MARINE STEAM ENGINE BECAME THE STANDARD POWERPLANT FOR AMERICAN LIGHTSHIPS AFTER 1904. ONLY ONE LIGHTSHIP. NO. 83, RETAINS HER ENGINE. (Society of Naval Architects and Marine Engineers)

propelled lightships often did not rely on their engines for navigation and were also towed to station, using the steam plant for the auxiliary machinery and fog signal and occasionally running the engine to keep headway in heavy seas. Early 20th century steel-hulled, steam-propelled lightships also carried riding sails on spencer masts; these were intended to steady the lightship. For the most part, though, the development of propulsion plants meant the diminishing use of the masts to carry any sort of sail.

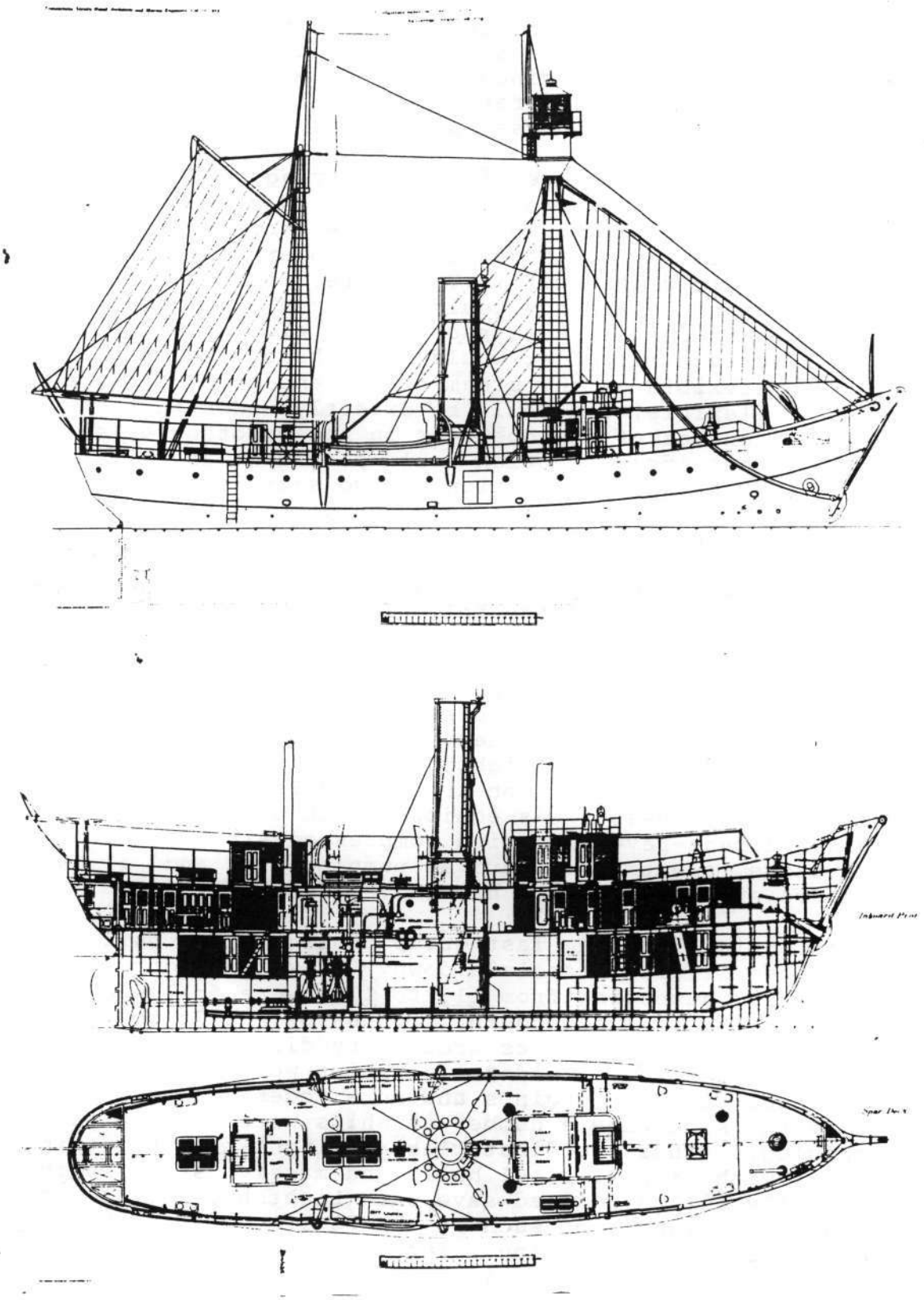
Additionally, the development of steam, and later Diesel plants, introduced electricity aboard the lightships. No. 51 was equipped with electric incandescent lamps in 1892, the first to be so fitted. By 1917, older oil lamps were being replaced with electric lights, which no longer required lowering to the deck for cleaning and refueling. That year nine electric lights were aboard lightships, a number that substantially jumped within the next decade. [23] The electric lantern and the introduction of Fourth Order Fresnel lenses at the masthead was another major change in the lightship brought about by the development of shipboard power plants.

When Lightship No. 55 was built in 1891, the vessel was outfitted, as were her two sisters, with a single cylinder, non-condensing 100 HP marine steam engine with a 14-inch bore and a 16-inch stroke. The engine drove a single screw, and the vessel was capable of 8 knots speed. [24] In 1896, when Lightship No. 66 was built by the Bath Iron Works at Bath, Maine, she was fitted with a single cylinder 350 HP condensing engine with a 20-inch bore and a 22-inch stroke that drove a 4-bladed propeller. Bath Iron Works installed the same engine in Lightships No. 68, 69, and 71. The first compound steam engine in a lightship was a 380 HP engine installed aboard No. 76 in 1904, followed the same year by a 325 HP vertical, surface condensing compound engine with 16- and 31-inch bores and a 24-inch stroke in Lightship No. 78. [25]

The vertical, surface condensing compound engine became the standard for steam lightships, and compound engines with near-identical cylinder dimensions, strokes, and horsepower were employed on nearly all lightships that were built after 1904. Steam engines were installed through 1923; after that date only Diesel and Diesel-electric systems were installed in new lightships (with the exception of No. 112, built in 1936 with a compound reciprocating engine, which was the last steam-propelled lightship). The introduction of steam moved the lightships into a new generation of development, and in 1922, the U.S. Lighthouse Service (a Government agency which assumed control from the Lighthouse Board in 1910) had 61 lightships in commission, of which 38 were self-propelled, all but three by steam. [26]

THE THIRD GENERATION: DIESEL AND DIESEL-ELECTRIC LIGHTSHIPS

The installation of diesel-electric plants in lightships was considered by marine engineers as early as 1913, when G. H.



5. SECOND GENERATION STEEL-HULLED. STEAM-POWERED LIGHTSHIP NO. 94. SHOWN HERE. WAS TYPICAL FOR THE PERIOD 1904-1923. MANY OF HER SISTERS WERE LATER CONVERTED TO DIESEL AND DIESEL-ELECTRIC PROPULSION. (Society of Naval Architects and Marine Engineers)

Blaker and George Crouse Cook discussed the matter. Blaker proposed two 150 HP engines "direct-connected to direct-current generators.... these engines to be connected at the switchboard so that they could be operated in parallel." The system would power the engines, windlass, and lights, and would

> obviate the necessity of carrying steam, at working pressure, 24 hours per day, seven days a week. It would obviate the carrying of much coal, as for the same horse-power the oil would weigh half....Therefore, double the amount of energy could be stored upon the same ship in the same space....The electrically-driven propeller would make the outfit as flexible as any steam plant, and probably more flexible, and would be directly under the control of the operator in the pilothouse, so that instant action could be had at any time. With the installation of two sets it would obviate almost entirely the possibility of a break-down. [27]

In 1915, Lightship No. 98 was built with a 4-cylinder Mietz & Weiss kerosene engine; the following year, No. 101 and 102 were built with similar engines. [28] This initial venture into internal combustion engines did not result in the large-scale adoption of gasoline or kerosene engines for lightships, however. Within a decade, the first diesel engines were being installed in lightships, heralding the next major stage in lightship development. The first lightship built with full diesel propulsion was No. 111, constructed by Bath Iron Works in 1927. The 132.4-foot vessel was equipped with a 8-cylinder diesel engine, direct-reversing with compressed air, with auxiliary generators, electrically-driven pump motors, and a small low-pressure steam boiler for heating. [29]

Beginning in 1926, the last group of lightships built by the U.S. Lighthouse Service were laid down. These 133-foot class lightships, numbering from 113 to 117, were followed by the 114-foot No. 118. These "modern" lightships, built between 1926 and 1938, embodied the changes wrought by direct diesel and diesel-electric technology. Older lightships were modified with diesel and diesel-electric engines and more modern electrical systems, but at the same time a number of ships were built with the new technology. Thus the first class of lightships built in the 20th century with riveted steel hulls and massive steam engines were eventually all re-engined save one (Lightship No. 83) or replaced by lightships such as the Pacific Coast's No. 100, with diesel-electric propulsion, diaphone air horns, 1,000-watt electric lights in 375-mm lenses, and a reduced tonnage (with the installation of a less heavy diesels) meaning less resistance to the sea and hence less battering. [30]

THE FOURTH GENERATION: COAST GUARD-BUILT LIGHTSHIPS

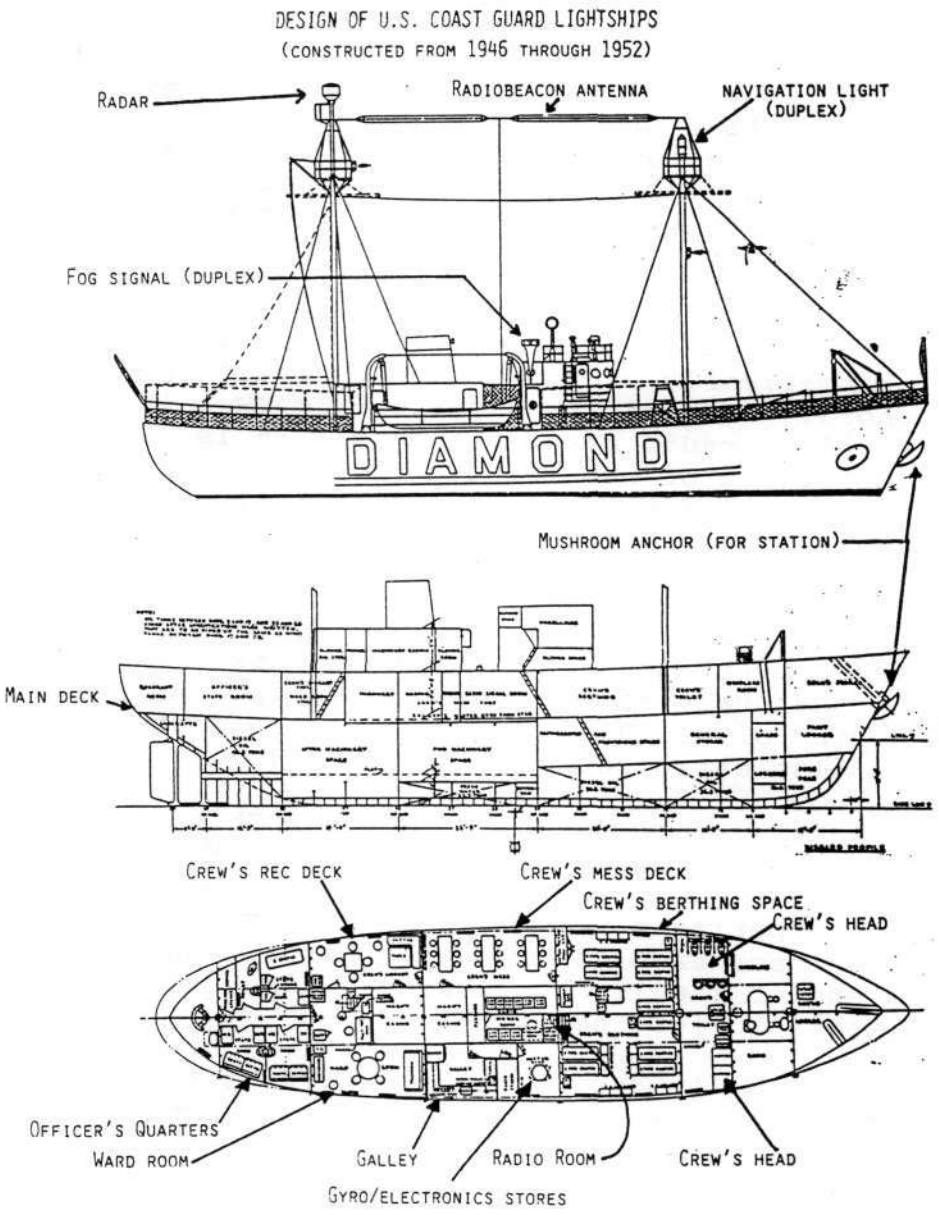
In 1939, the Lighthouse Service was made part of the reorganized United States Coast Guard. The Coast Guard inherited the lightships at a time when the need for the vessels was diminishing. The same year, the Lighthouse Service noted that the number of floating aids to navigation had decreased since 1880. [31] Automation of lights, the radio beacon, and the development of large navigational buoys played a major role in lightship decommissioning. Not surprisingly, in 1949-1950, the Coast Guard modified Lightship No. 99 to an unmanned, experimental radio-controlled vessel named Exp or Exp-99. According to Popular Science, the vessel was to have

> a "crew" of electronic devices operating automatically or controlled by radio from shore. Each of its signals -- marker light, foghorn, radio beacon, and bell -- is either duplicated or otherwise arranged to defy failure. If either main light fails, the other keeps operating; if both fail, there's still an emergency battery light. Three diesel generators work in rotation to supply power. If one quits, another automatically takes over. Cost of the new ship is $375,000 -- just half of a manned lightship. An annual saving of $59,000 in maintenance and personnel is also anticipated. [32]

The vessel was moved to the Coast Guard's Third District headquarters at Staten Island, New York, in May 1950, for a three-month experimental trial run at the Ambrose station. However, the experiment was postponed indefinitely and the lightship's disposition is unknown. Despite this, a portent of the future end of the lightship was at hand. In just 33 years, the last lightship left her station.

The Coast Guard built six lightships. The first two, WAL- (later WLV-) 189 and 196, were built at Bay City, Michigan, in 1946. Somewhat similar in appearance to the 1930s lightships, the Coast Guard lightships, WLV-189 and 196, as well as the four lightships that followed them, were the only completely welded lightships, built with a high degree of structural integrity and transverse bulkheads. These vessels were also the only lightships built with alternating current electrical systems throughout. They were direct diesel propelled, reflecting improvements made in high-compression diesel engines since the 1930s. [33]

In 1950, two additional lightships, built to the same general plan of 189 and 196, and with the same features, were launched from the Rice Brothers shipyard at East Boothbay, Maine. WAL-604 and 605 were the last lightships built under contract for the government. In the same year, the Coast Guard built at its Curtis Bay, Maryland, yard Lightship WAL-612, another sister ship to 189 and 196. The last lightship was also built at Curtis Bay.



6. FOURTH GENERATION COAST GUARD-BUILT LIGHTSHIP DESIGN. THE LAST OF THE AMERICAN LIGHTSHIPS. THE FOURTH GENERATION VESSELS WERE THE ONLY ALL-WELDED LIGHTSHIPS. (U.S. Lighthouse Society)

Constructed in 1952, WAL-613, like her five preceding sisters, was a 128-foot welded steel vessel. However, the lightship mounted a single tripod mast of British design with the light on top. [34] The Coast Guard-built lightships were the last in service, as all others were gradually retired. Technology brought an end to manned lightships about the same time manned lighthouses were being considered for automation. Large navigational buoys, 40 feet in diameter and 42 feet high, painted lightship red with automatic lights, fog signals, and radio beacons began to replace lightships in 1967. In 1983 the last two lightships, marking the Nantucket station, retired, ending a 150-year lightship tradition in the United States.

SURVIVING LIGHTSHIPS IN THE UNITED STATES

There are 22 surviving lightships in the United States. There may be as many as five former U.S. lightships surviving abroad in Canada, Surinam, Vietnam, and Uruguay. When lightships were decommissioned, either by the Fifth Auditor, the Lighthouse Board, the Lighthouse Service, or the Coast Guard, they were as a general rule stripped of their equipment and sold. Some, mostly wooden hulled vessels, were scrapped by the government. As a result, only a small number of lightships survive today, and all date to no earlier than 1902. Outside of wrecks, or hulks like the stripped hull of Lightship No. 1 on the Merrimack River, no first generation wooden lightships survive. Likewise, none of the composite or early iron or steel-hulled lightships of the 1890s survive.

One of the steam-powered, but not steam-propelled lightships survives. Lightship No. 75, a 83.9-foot steel scow lightship, was built at Ferrysburg, Michigan, in 1902 for Great Lakes service. Sold in 1939, the vessel was converted into the power lighter St. Clair on New York harbor. In service and homeported at Staten Island, the former lightship has been greatly modified, including the installation of engines and an additional mast.

Eight of the second generation steam-propelled lightships survive. They are numbers 79 (1904); 83 (1904); 84 (1907); 85 (1907); 87 (1907); 103 (1920); and 107 (1923). One other steam-propelled second generation lightship, No. 112 (1936), was specially designed and built after the heyday of the steam lightships and belongs in a class by herself. No. 79, also known as "Barnegat," is a museum vessel being restored by the Philadelphia Ship Preservation Guild. She is listed in the National Register of Historic Places. No. 83, also known as "Relief," is a museum vessel at Northwest Seaport, Inc., in Seattle, Washington. Listed in the National Register of Historic Places, No. 83 was designated a National Historic Landmark on April 11, 1989.

No. 84, also known as "Relief," was substantially modified for use as a display vessel by the Harry Lundeberg School of Seamanship. Recently sold for conversion into a restaurant, the lightship, missing much of her superstructure and with a gutted

main deck, is moored off Brooklyn, New York. Discussions are underway for the possible return of the lightship to Jacksonville, Florida, where she would be extensively restored and placed on display. No. 84 served near there as "St. John's River" from 1929 to 1954. No. 85, decommissioned in 1962, was sold to Oceanology International and converted into the research vessel Recoverer, homeported in Chicago. No. 87, also known as "Ambrose," is a museum vessel displayed at South Street Seaport, in New York City. Listed in the National Register, No. 87 was also designated a NHL on April 11, 1989.

No. 103, also known as "Huron," is a dry-berth exhibit owned by the City of Port Huron, Michigan and displayed on the banks of the St. Clair River. No. 103 is listed in the National Register. No. 107, last known as "Relief," is a hulk at the North American Metals shipbreaking yard in Bordentown, New Jersey. No. 112, also known as "Nantucket," is a museum vessel owned and operated by Nantucket Lightship Preservation, Inc., which is currently negotiating to homeport the vessel in Portland, Maine. Of all these vessels, only No. 83 retains her original steam engine.

Two of the kerosene engine-propelled lightships survive; No. 101, also known as "Portsmouth," is a dry-berth museum vessel owned and displayed by the City of Portsmouth, Virginia. Listed in the National Register, No. 101 was designated a NHL on May 5, 1989. No. 102, repowered with a diesel engine in 1944, was sold in 1965, converted into a crab processing ship, and in 1970 was the fishing vessel Big Dipper, homeported in Ketchikan, Alaska. Neither of these vessels retain their original kerosene engine.

Five of the third generation diesel and diesel-electric lightships survive. They are Nos. 111, 114, 115, 116, and 118. No. 111, last known as "Portland," is a hulk at the North American Metals shipbreaking yard in Bordentown, New Jersey. No. 114, also last officially designated as "Portland," is now known by the psuedo-designation "New Bedford." There was no such station, but the vessel is owned by the City of New Bedford, which is in the process of deciding the lightship's future as a display vessel. No. 115, also known as "Frying Pan Shoal," is a grounded hulk on Chesapeake Bay. She is in poor condition, missing the mainmast and original engine, and recently suffered a major engineroom fire in 1988. No. 116, also known as "Chesapeake," is a floating museum vessel owned by the National Park Service and on 25-year loan to the Baltimore Maritime Museum. The lightship is open to the public on the waterfront of Baltimore's Inner Harbor. No. 116 is listed in the National Register. No. 118, also known as "Overfalls," (though never assigned to this station) is a floating museum vessel owned by the Lewes Historical Society that is displayed on the waterfront of Lewes, Delaware. No. 118 was recently listed in the National Register of Historic Places.

All six of the Coast Guard-built lightships survive. WLV-189 is a display vessel moored at Atlantic City, New Jersey. WLV-196, laid up as an accomodation ship at Seattle, Washington, was

recently sold for conversion into a fishing vessel to operate out of Ketchikan. WLV-604, also known as "Columbia," is a floating, operational museum vessel owned by the Columbia River Maritime Museum and displayed on the waterfront of Astoria, Oregon. WLV-605, also known as "Relief," is an operational museum vessel. Owned by the United States Lighthouse Society of San Francisco, WLV-605 is currently berthed in Oakland, California. Negotiations for a permanent homeport for the vessel in the San Francisco Bay Area are underway. WLV-612, also known as "Nantucket I," is berthed at Charlestown Navy Yard, Boston, Massachusetts. Owned by the Boston Metropolitan District Commission, the vessel is slated for display as a museum ship. WLV-613, also known as "Nantucket II," is berthed near 612 and is owned by New England Historic Seaport, which intends to restore the vessel as a floating headquarters for their sailing ship Spirit of Massachusetts. [35]

LIGHTSHIPS SELECTED FOR STUDY

Eight of the surviving 22 lightships were selected for study as potential National Historic Landmarks. The criteria for selection included 1) representation of a specific type (generation) of lightship; 2) integrity of original design; 3) historic significance of the vessel; and 4) the national significance of the stations on which she served. The eight lightships studied were:

Lightship No. 83, "Relief," Seattle, WA
Lightship No. 87, "Ambrose," New York, NY
Lightship No. 101, "Portsmouth," Portsmouth, VA
Lightship No. 103, "Huron," Port Huron, MI
Lightship No. 112, "Nantucket," Portland, ME
Lightship No. 116, "Chesapeake," Baltimore, MD
Lightship WLV-604, "Columbia," Astoria, OR
Lightship WLV-605, "Relief," Oakland, CA

Lightship No. 83 was selected as the best example of the second generation, steam-propelled lightships. She alone retains her original compound steam engine, and served as the first lightship on the significant Blunts Reef Station. Lightship No. 87, also a second generation steam-propelled vessel, was re-engined in 1932. However, she retains excellent integrity of design in every other area, was the first lightship in the United States equipped with a radio beacon, and served with distinction on the nationally-significant Ambrose Station, marking the entrance to New York harbor, the nation's principal port. Lightship No. 101 was selected because despite her re-engining in 1944, she retains excellent integrity of design in all other areas and is the only lightship remaining with the single tubular mast for the light that characterized the lightships of the 1920s. Her station assignments, at Cape Charles, Virginia, Overfalls, and Stonehorse Shoal, marked the entrance to the important ports of Chesapeake Bay, Delaware Bay, and warned mariners away from a dangerous shoal off Cape Cod.

Lightship No. 103 was selected for study because she is the sole surviving Great Lakes lightship, designed and built specially for the lakes, serving on several stations as a relief lightship and finally serving at "Lake Huron," a nationally significant station on the major water highway of the Great Lakes. No. 112 was selected because she is a unique lightship built specially for the nationally significant Nantucket Station, one of the earliest stations in the United States, the farthest offshore, and the first beacon to welcome transatlantic vessels sailing to the United States. Serving solely on the Nantucket station, she is the oldest vessel associated with it. Lightship No. 116 was selected for study because she retains the highest level of integrity of the five surviving, third generation Diesel and Diesel-electric lightships. She also served on the nationally significant "Chesapeake" station (formerly "Cape Charles") which marked the entrance to the ports of Chesapeake Bay, including Newport News, Hampton Roads, Norfolk, Richmond, and Baltimore.

Two of the six surviving Coast Guard-built lightships were selected for study. These vessels represent the fourth and last generation of American lightships. WLV-604 and 605 both possess the highest level of integrity and are in the best condition of the group, being operational. 604 served a more significant station, Columbia River, and was the last vessel stationed there. However, 605 was the last vessel stationed at Blunts Reef and also served as relief lightship for the entire west coast of the United States until retired in 1975.

Nearly all of the other surviving lightships are historic vessels of considerable significance. The integrity of those in shipbreaker's yards or converted to other uses might preclude listing in the National Register, but individual assessments are needed and restoration of some might result in listing. A review of the National Register eligibility for three lightships not already listed, namely lightships No. 114, WLV-612 and WLV-613, is strongly recommended.

NOTES

1
Willard Flint, Lightships of the United States Government: Reference Notes (Washington, D.C.: U.S. Coast Guard, 1989). Hereafter cited as Flint, Lightships. The book is unpaginated, hence the specific entry for individual lightships and stations will be cited.

2
See George R. Putnam, Lighthouses and Lightships of the United States (Boston and New York: The Houghton Mifflin Co., 1917).

3
Hill described the vessel in the carpenter's certificates filed in the Custom House at Philadelphia, which were reviewed in 1945 by Thomas Hornsby, who reported his research in a note entitled "Light-Vessels" in The American Neptune, Vol. V, No. 3 (July 1945) p. 246.

4
See George Crouse Cook, "The Evolution of the Lightship," Transactions of the Society of Naval Architects and Marine Engineers, Vol. XXI. (New York: Society of Naval Architects and Marine Engineers, 1913) p. 102.

5
Cedric Ridgely-Nevitt, "A Light-vessel of 1823," The American Neptune Vol. V, No. 2 (April 1945) pp. 115-120. The plans for the 106-ton lightships appear on p. 118.

6
As cited in Frederic L. Thompson, The Lightships of Cape Cod (Portland, Maine: Congress Square Press, 1983), pp. 29-30.

7
Report of the Officers Constituting the Light-House Board.... Senate Ex. Doc. 28, 32nd Cong., 1st Session, 1852. pp. 34.

8
Ibid., p. 51.

9
Flint, Lightships, entry for LV 1.

10
Gustav Kobbe, "Life on the South Shoal Lightship," The Century Magazine, August 1891.

11
Flint, entry for Lightship No. 31.

12
Flint, Op.cit, entries for the lightships cited by number in the text.

13
Arnold Burges Johnson, The Modern Light-House Service (Washington, D.C.: Government Printing Office, 1890) p. 41.

14
Flint, Op.cit Also see Cook, "The Evolution of the Lightship," pp. 107-108.

15
Flint, Op.cit, entry for LV 44.

16
Flint, Op.cit, entry for LV 51.

17
Flint, Op.cit, entry for LV 78.

18
Willard Flint, personal communication, April 18, 1989

19
Flint, Lightships, entry for LV 39.

20
Ibid, entries for LVs 40-41.

21
Annual Report of the Light-House Board to the Secretary of the Treasury, For the Fiscal Year Ended June 30, 1890 (Washington, D.C.: Government Printing Office, 1890) pp. 205-207.

22
Flint, Op.cit, entry for LV 74.

23
Putnam, Lighthouses and Lightships of the United States p. 204.

24
Flint, Lightships, entry for LV 55

25
Flint, Op.cit, entries for LVs 66, 68, 69, 71, 76, and 78.

26
Fifty-Fourth Annual List of Merchant Vessels of the United States.... (Washington, D.C.: Government Printing Office, 1922) p. 566.

27
Cook, "The Evolution of the Lightship," pp. 116-117.

28
Flint, Op.cit, entries for LVs 98, 101 and 102.

29
"New Diesel Lightship for Northeast End," Lighthouse Service Bulletin, Vol. III, No. 38 (February 1, 1927) pp. 177-178.

30
A.C. Hardy, American Ship Types: A Review of the Work, Characteristics, and Construction of Ship Types Peculiar to the Waters of the North American Continent (New York: D. Van Nostrand Co., Inc., 1927) pp. 254-257, passim.

31
"Fixed or Floating Aids," U.S. Lighthouse Service Bulletin, Vol. V, No. 38 (February 1939) p. 158.

32
"Electronic "Crew" Mans Lightship," Popular Science, May 1950, p. 145.

33
Flint, Lightships, entries for WLV-189 and 196.

34
Ibid, entries for WLV-604, 605, 612, and 613.

35
See James P. Delgado, ed. Evaluative Inventory of Large Preserved Historic Vessels in the United States (Washington, D.C.: National Park Service, 1989) and Flint, Lightships.

ACKNOWLEDGEMENTS:

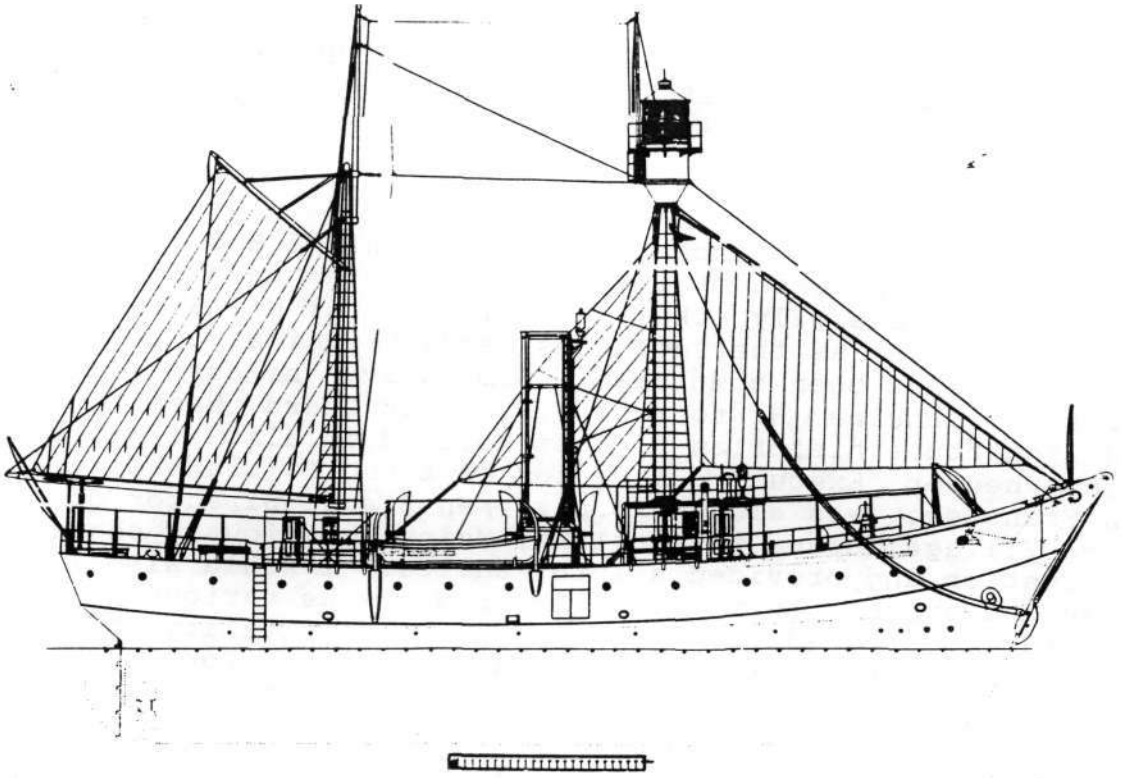
The advice and assistance of Willard Flint of Rockville, Maryland, the preeminent lightship historian in the United States, is gratefully acknowledged. Without Mr. Flint's research and assistance, as the footnotes readily indicate, this study could not have been completed. Similarly, the assistance of Dr. Robert L. Scheina, Historian, U.S. Coast Guard, Washington, D.C., and lighthouse historian F. Ross Holland is also acknowledged. Wayne Wheeler, Executive Director of the U.S. Lighthouse Society, San Francisco, was also helpful. Ken Black, Director of the Shore Village Museum in Rockland, Maine, graciously shared information and provided helpful advice. I would also like to thank the owners, operators, and crew of the various lightships visited and studied, for their gracious hospitality and sharing of research materials and photographs. The J. Porter Shaw Library at San Francisco Maritime National Historical Park served as the primary source of many of the sources consulted in the study, as did the research library of the U.S. Lighthouse Society.

B-3718

THE MARITIME HERITAGE OF THE UNITED STATES
NATIONAL HISTORIC LANDMARK THEME STUDY

Part One: Large Preserved Historic Vessels

LIGHTSHIPS



James P. Delgado
Maritime Historian
United States Department of the Interior
National Park Service

Washington, D.C.

June 1989

Form No. 10-300 (Rev. 10-74)

B-3718

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR FEDERAL PROPERTIES

FOR NPS USE ONLY
RECEIVED
DATE ENTERED 8/1/80

96

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

DESIGNATED NATIONAL HISTORIC LANDMARK 12/20/89

HISTORIC
Lightship Chesapeake
AND/OR COMMON

2 LOCATION

STREET & NUMBER
East Potomac Park — NOT FOR PUBLICATION
CITY, TOWN
Washington — VICINITY OF
CONGRESSIONAL DISTRICT
STATE
D.C.
CODE
11
COUNTY
CODE
001

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
_DISTRICT	X PUBLIC	X OCCUPIED	_AGRICULTURE	X MUSEUM
_BUILDING(S)	_PRIVATE	_UNOCCUPIED	_COMMERCIAL	X PARK
_STRUCTURE	_BOTH	_WORK IN PROGRESS	X EDUCATIONAL	_PRIVATE RESIDENCE
_SITE	PUBLIC ACQUISITION	ACCESSIBLE	_ENTERTAINMENT	_RELIGIOUS
X OBJECT	_IN PROCESS	X YES: RESTRICTED	_GOVERNMENT	_SCIENTIFIC
	_BEING CONSIDERED	_YES: UNRESTRICTED	_INDUSTRIAL	_TRANSPORTATION
		_NO	_MILITARY	_OTHER

4 AGENCY

REGIONAL HEADQUARTERS (If applicable)
National Capital Region, National Park Service
STREET & NUMBER
1100 Ohio Drive, S.W.
CITY, TOWN
Washington — VICINITY OF
STATE
D.C. 20242

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC
STREET & NUMBER
CITY, TOWN
STATE

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
List of Classified Structures, National Park Service
DATE
1976
X FEDERAL _STATE _COUNTY _LOCAL
DEPOSITORY FOR SURVEY RECORDS
Historic Resource Services Division
National Capital Region, National Park Service
CITY, TOWN
Washington
STATE
D.C.

7 DESCRIPTION

B-3718

CONDITION		CHECK ONE	CHECK ONE	
_EXCELLENT	_DETERIORATED	_UNALTERED	_ORIGINAL SITE	
XGOOD	_RUINS	XALTERED	XMOVED	DATEvarious
_FAIR	_UNEXPOSED			

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Lightship Chesapeake is a steel-hulled vessel 133'3" in length and 30' in beam. It draws approximately 12'6" and displaces 630 gross tons. The hull has the high bow and freeboard and rounded stern characteristic of lightships, designed for maximum stability while riding at anchor under heavy wind and sea conditions. A diesel-electric motor of 350 horsepower turning a single screw propels the ship at a maximum speed of nine knots.

Within the hull at the bow is an anchor/windlass compartment over a paint locker. Just aft, beneath the pilot house and captain's cabin, are cabins for 10 seamen (two per cabin) over the forward hold. Amidships are the mess deck and cook's cabin over the engine room. Next aft is the galley. Beneath the radio room above-deck at the stern is the wardroom with individual cabins for four officers, with the machine shop below. Between the machine shop and the engine room in the bottom of the ship is the motor room.

A tall mast rising from the deck ahead of the radio room carries two 30,000 candlepower beacons with Fresnel lenses, one intended for auxiliary use. A shorter mast just aft of the pilot house carries a radar scanner installed about 1950. Previously the auxiliary light was mounted atop this mast.

The hull is painted red with large white letters bearing the name of the ship's duty station (Chesapeake) on each side. Between 1930 and 1933 it was lettered "Fenwick" for its station off Fenwick Island, Delaware. From 1966 to 1970 it bore the name "Delaware" for its post at the mouth of Delaware Bay. Following its transfer to the National Park Service it was relabeled "Chesapeake" in recognition of its longest tour of duty at that location.

During its years of service several additional modifications were made to the ship. There was some replacement of diesel generating engines, and a number of hatches and portholes were closed or relocated. When the ship was decommissioned its foghorn, most radio equipment, and the original wooden wheel were removed. Since then the engine room controls have been enclosed, there has been some modern refurnishing, and some cabins have been adapted for use as offices. The vessel is unchanged for the most part, however, and retains its original character to a great extent.

An elevation drawing of the ship is provided in the accompanying leaflet.

E SIGNIFICANCE

B-3718

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
PREHISTORIC	ARCHEOLOGY-PREHISTORIC	COMMUNITY PLANNING	LANDSCAPE ARCHITECTURE	RELIGION
1400-1499	ARCHEOLOGY-HISTORIC	CONSERVATION	LAW	SCIENCE
1500-1599	AGRICULTURE	ECONOMICS	LITERATURE	SCULPTURE
1600-1699	ARCHITECTURE	EDUCATION	MILITARY	SOCIAL/HUMANITARIAN
1700-1799	ART	ENGINEERING	MUSIC	THEATER
1800-1899	X COMMERCE	EXPLORATION/SETTLEMENT	PHILOSOPHY	X TRANSPORTATION
X 1900-	COMMUNICATIONS	INDUSTRY	POLITICS/GOVERNMENT	OTHER (SPECIFY)
		INVENTION		

SPECIFIC DATES 1930

BUILDER/ARCHITECT Lewis Green II, Naval Architect
Charleston Drydock & Machine Co.

STATEMENT OF SIGNIFICANCE

The Lightship Chesapeake is significant as a rare operational example of a type of navigational aid now almost extinct in the United States.

A lightship is a floating lighthouse, designed for use in coastal waters where a fixed beacon cannot readily be placed. The idea may be traced to the days of the Roman Empire, when galleys with lighted fire baskets at their mastheads were occasionally used as aids to navigation. In 1731 Robert Hamblin, a British entrepreneur, received a patent to place a single-masted sloop with two lanterns in the Thames estuary and collect duties from ship owners. The first lightship in the United States was placed off the Virginia coast in 1820 by the United States Lighthouse Establishment, which placed four more such vessels in the Chesapeake Bay the next year at public expense.

The number of United States lightship stations reached a maximum of 56 in 1909. Many of these were in outer waters, since lighthouses employing the new screw-pile construction had replaced many of the "inner" lightships. Thereafter the number declined as more economical and efficient light buoys and ultimately Texas towers supplanted even the outer lightships.

LS 116, exemplifying the best lightship technology of its time, left the Charleston Drydock and Machine Company, Charleston, S.C., on August 17, 1930, for its maiden voyage to Norfolk, Va. Only five more American lightships would be built. Until 1933 LS 116 was stationed off Fenwick Island, Del., and designated Fenwick. On July 17 of that year it began its long service off the mouth of the Chesapeake Bay, acquiring the name Chesapeake.

When the U.S. Lighthouse Service and its vessels were absorbed by the U.S. Coast Guard in 1939, LS 116 was renumbered WAL 538 and later WLV 538. During World War II it was pressed into U.S. Navy service and was stationed off Sandwich, Mass., until 1945, when it returned to duty at the mouth of the Chesapeake. There in 1962 the Chesapeake survived a major storm in which a mountainous wave buckled the forward bulkhead of the pilot house.

(continued)

In September 1965 the Chesapeake's station was taken by a Texas tower light, and the vessel moved to its last official tour of duty at the entrance to the Delaware Bay. In 1970 an automated Large Navigational Buoy (LNB) again replaced the lightship, which was mothballed at Cape May, N.J., and decommissioned on January 6, 1971.

The National Park Service acquired the vessel in August 1971, refurbished it as a historical exhibit and a vehicle for maritime environmental education, and stationed it in the Washington Channel of the Potomac River off East Potomac Park, Washington, D.C. From here it makes occasional cruises down the Potomac and periodically displays its beacon. Its present mooring is unrelated to its historical significance and is subject to change without effect on that significance.

At this time (1980) only one American lightship--the Nantucket, off Nantucket Island, Mass.--remains in active service, and its days are numbered. The Chesapeake therefore illustrates a nearly bygone era of navigational assistance in the United States.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

B-3718

Frank F. Hebblethwaite. "A Background History of the Lightship Chesapeake" (typescript). National Park Service, 1977.

Francis Ross Holland, Jr. America's Lighthouses; Their Illustrated History Since 1716. Brattleboro, Vt.: Stephen Greene Press, 1972.

National Park Service. "Lightship Chesapeake" (leaflet). N.d.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY N/A

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	18	32,42,7,9	4,30,47,5,0
B			
C			
D			

VERBAL BOUNDARY DESCRIPTION

The nomination includes only the ship, which is by nature movable and which is not historically associated with the referenced location.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Barry Mackintosh, Regional Historian

ORGANIZATION — DATE

National Capital Region, National Park Service — April 11, 1980

STREET & NUMBER — TELEPHONE

1100 Ohio Drive, S.W. — (202)426-6660

CITY OR TOWN — STATE

Washington — D.C. 20242

12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES X NO ___ NONE ___

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is ___ National ___ State ___ Local.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE — DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE 8/1/80

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST: — DATE

KEEPER OF THE NATIONAL REGISTER

GPO 899-214

B-3718

Form No. 10-300a
(Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

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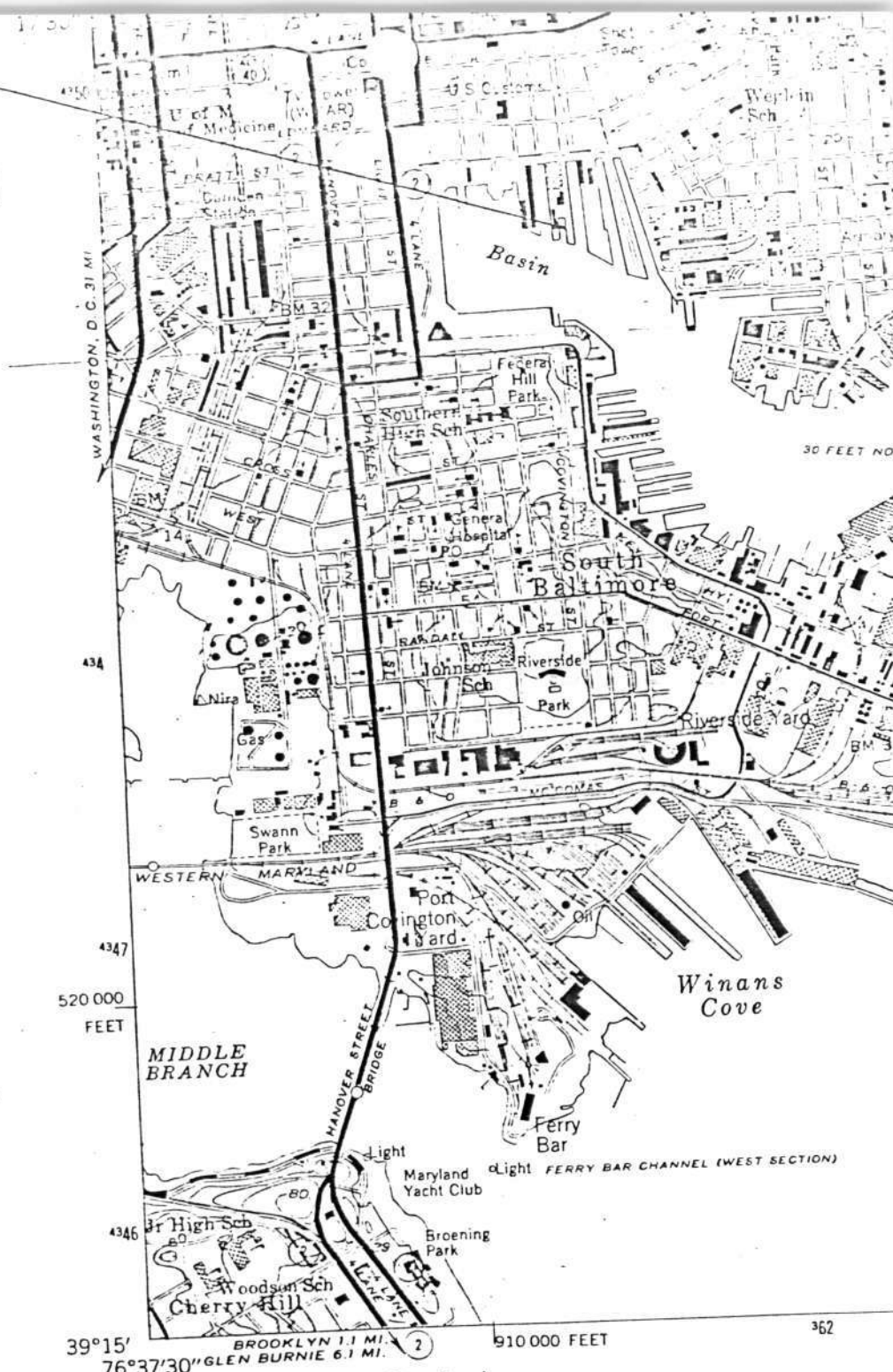
DATE ENTERED

CONTINUATION SHEET ITEM NUMBER 10 PAGE

On May 27, 1981, the Lightship Chesapeake was loaned by the National Park Service to the City of Baltimore, Maryland, for a term of 25 years. The ship will be moored in Baltimore's Inner Harbor during this period.

UTM Reference: 18/361380/4349360

B-3718
LIGHTSHIP CHESAPEAKE
UTM Reference:
18/361380/4349360



(RELAY)
5662 II NW

Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, USC&GS, USCE, and City of Baltimore

Topography from aerial photographs by photogrammetric methods. Aerial photographs taken 1943. Field checked 1944
Culture revised by the Geological Survey 1953

Hydrography compiled from USC&GS Chart 545 (1951)

Polyconic projection. 1927 North American datum
10,000-foot grid based on Maryland coordinate system
1000-meter Universal Transverse Mercator grid ticks,
zone 18, shown in blue

Red tint indicates areas in which only landmark buildings are shown

Revisions shown in purple compiled by Geological Survey from aerial photographs taken 1966 and 1974. This information not field checked

Purple tint indicates extensions of urban areas

B-3718